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LOOKING FORWARD IN PEDIATRICS

CHAIRMAN'S ADDRESS *

C. ANDERSON ALDRICH, M.D.

WINNETKA, ILL.

This subject was suggested by statements to the effect that pediatrics, having fulfilled its purpose, might well disappear, donating its contributions to general medicine. Because to my mind we have scarcely entered the field of our greatest possibilities and because I am continually impressed with the inadequacy of our present knowledge, I thought it worth while to sketch briefly some of the vistas seen ahead. In considering the probable future of pediatrics, one must bear in mind that it came into being because of the neglect of babies and young children who, at best, were being treated as though they were small adults, and it must be remembered that, outside of such groups as this, there has been little change in the former concept of the problems of infancy.

Since pediatrics has expanded to become that branch of medicine which cares for the growing individual, its original function, infant feeding, has become but a small part of its duties. But even in this field, though we have traveled far in the art of child nurture, one would be extremely optimistic to say that all feeding problems have been solved. For my part, I still encounter difficulties in adjusting food to some babies, and babies to some foods, and I am quite sure that most of us have trouble with children who refuse to become reconciled to food of any kind. If feeding problems, which more than any other have absorbed pediatric thought, remain unsolved, certainly we cannot boast that many of the other knotty questions that puzzle thinking men are settled. The solution of these problems should be a reason for the renewed efforts of physicians experienced in the field prepared by their own efforts rather than of those less specifically interested. Perhaps a few of these problems are worthy of attention here.

INFECTIONS OF THE UPPER RESPIRATORY TRACT

The one great accomplishment in the treatment of infections of the upper respiratory tract has been the demonstration that rest in bed is of great value in cases in which fever exists. It is a curious commentary on our achievements that, with all our knowledge, the most common ailment of children and one of the most serious to health and life remains largely enigmatic. This is partly due to the fact that little is known of the etiology of the "common cold," and partly to the fact that investigations into its nature and its complications have not been as productive of positive results as is desirable. "What is the indication for paracentesis of the ear drum?" It is probable that if this question were answered by all members of this audience, enough different ideas would be expressed to provide discussion for the rest of the session. "Does the instillation of antiseptics in the nose do harm or good?" "Do vaccines prevent or modify colds?" "Does an exceptionally good diet tend to prevent them?" "What is the relation of vitamin A or carotene to infections of the upper respiratory tract?" These and many other such questions are put to us daily, and we are forced, unless prejudiced in our opinion, to reply that we do not know. They are answerable only by the method of controlled clinical experiment and should be settled before we can feel comfortable in our accomplishments.

If sufficiently interested, any pediatric society could find the answer to any one of these problems with a fair degree of scientific accuracy. It would be necessary in the case of otitis media, for instance, that a group of competent physicians keep uniform and accurate records on all such cases for a prolonged period of time. The results of their various methods of treatment could then be tabulated and a fair estimate made on the relative merits. To establish definite indications for paracentesis in the various types of otitis media would be an outstanding contribution to clinical medicine and I see no possible way of accomplishing this other than through cooperation in group research.

In his small book "Principles of Diagnosis and Treatment in Heart Affections," Sir James McKenzie makes the following statement:

> It is the general practitioner who sees disease in its early stages, who has the opportunity of finding out what conditions predispose to the disease and of following it through its various stages. If you but reflect . . . on the opportunity of the men who devote their time to research, you will be forced to the conclusion that this is very restricted. And you will be forced to the conclusion that one and only one class of men can carry out this particular line of research, the general practitioner.

He goes on to say that this great field of clinical research has barely been touched, and that this is one of the reasons for the halting progress of medical knowledge. It would seem, on account of the special training which so many men particularly interested in children have had, that they should form an ideal group for the kind of clinical investigation McKenzie mentions. J. L. Morse recently read a refreshing paper of this sort in which he reported the end-results of acute endocarditis after many years of observation.

ANAPHYLAXIS

The subject of anaphylaxis is another one intimately affecting children, about which relatively little is known.

* Read before the Section on Diseases of Children at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 10, 1931.

Can we consider our work done when we are daily called on to prescribe for patients with eczema and other allergic skin manifestations, with asthma, anaphylactic colds, or gastro-intestinal reactions, all of which baffle us to a large extent as to cause and treatment? Since we probably see more patients of this type than do any physicians other than pediatricians, and because we see them at a time when the condition is relatively simple, this subject is particularly pertinent for pediatric research.

ENDOCRINOLOGY

Can we feel satisfied with our knowledge of endocrinology or even with our participation in accumulating the accepted facts? Here again we find ourselves in a key position as to both treatment and research. Obviously it is in childhood that the treatment of endocrine disturbances will produce the most demonstrable results and here that it can best be studied. Yet, the largest endocrine clinics are not pediatric, and such therapy is little used in children except for the administration of thyroid extract to idiots and insulin to patients with diabetes. The therapeutic implications contained in some of the recent contributions of the biologists should make us alive to their possibilities and stimulate clinical investigation of the glands of internal secretion. Can some light be thrown on suprarenal, pituitary or parathyroid function through clinical observations? What is the ultimate outcome in cases of mild hypothyroidism and in the Froelich syndrome? Can we distinguish hyposuprarenalism or hypersuprarenalism in infants? Can we fit some of the poorly understood syndromes into any endocrine picture? Such questions tumble over one another when we read the contributions of endocrinology and constitute a challenge to our accomplishments lest biology outstrip us. We are hard put to it to keep up with the times.

VITAMINS

What is to be our attitude about vitamins, so important because of their effect on growth? We are so flooded with the bombastic and garbled overstatements of commercial enterprises that the practical physician as a matter of self-protection turns his face away at the name vitamin. One scarcely dares mention it in a scientific assembly for fear of being thought a faddist. Yet, if the issue is faced squarely and the subject is freed from its commercial flavor, one must admit its major importance on growth and development. Furthermore, it is unfair to the earnest scientists who are devoting their lives to this research to place on them the stigma that overcommercialization has given the subject. In itself, the topic is fascinating, the achievements in connection with vitamins have been epoch making, and the promise for the future is most alluring. What diseases of unknown origin may yet be classed among the avitaminoses? Are there unknown vitamins to be found tomorrow? What relation have vitamins to diseases heretofore classed as hygienic? Are any of the diseases met only in dispensary practice primarily due to avitaminosis?

Much is known about minimal vitamin requirements but practically nothing about optimal dosage. The fact that a few teaspoonfuls of orange juice will cure scurvy is not proof that this is all that is required for optimal growth. We need information on such points. It is our duty to the biologists that we add clinical data to their experimental work, and it is most fitting that we who are so interested in growth should busy ourselves with the various vitamin problems.

CARE OF THE NEW-BORN

In our chosen field, care of the new-born, we must admit that there is much to be learned. Only when we have succeeded in explaining and successfully treating cyanotic spells in babies, when we have found the cause of and the treatment for atelectasis and other neonatal disturbances so that the present high mortality may be materially reduced, can we feel any degree of assurance. After such problems have been solved, we still have before us the task of educating the public in the care of these most important individuals, new-born babies. As long as prematurity is an acceptable cause for death, we mark ourselves as incompetent in the care of such individuals.

MENTAL DEVELOPMENT

Have we learned all about the mental growth of the child and its effect on his physical status? It is with considerable trepidation that this controversial subject, child psychology and its relation to pediatrics, is broached. Feeling on this topic seems to run as high in professional as in lay circles, in spite of the fact that professional men are supposed to be more dispassionate than laymen. On the one hand, pediatricians of great clinical experience think that mental hygienists, in emphasizing the importance of their subject, are unduly alarming parents concerning the mental traits of children, that innocent habits are being called sex perversions, and that the tendency so far has been to arouse a tremendous furor without substituting a rational and workable plan for the psychic management of the child, with the result that parents are more confused than ever and, through their uncertainty and worry, make the environment unhealthy. On the other hand, psychologists and psychiatrists are equally insistent that physicians, through lack of consideration of psychic factors in children and parents and through their ignorance of the principles of mental hygiene, are fostering fear as a ruling force both in parent and child, are riding roughshod over the finer qualities of their charges, producing standardized children without individuality, and are missing one of the greatest opportunities ever presented to any class of men.

It is far from my purpose to discuss the relative merits of these points of view, and my opinion could count for little in this gathering; but it is perhaps timely to point out that such controversy, unless conducted in the most friendly and reciprocal spirit, is a lamentable waste of time. Here we have a problem of interrelationship between two established groups, physicians and mental hygienists. Of what use can it be to either if early relations are marked by bickering? Whatever the outcome, physicians will continue to supervise the care of children, and psychologic problems are inevitable in their practice. And, since the subject has so deep an appeal to parents, regardless of pediatric opinion, those interested in mental hygiene are going to exert more and more influence on contemporary thought about the child, inevitably affecting the work of the pediatrician. Extreme opinion in both groups will probably be unreconcilable but it would seem a great pity if the rank and file of two young, energetic, scientific groups of students of children could not find a common ground of understanding.

How is the pediatrician to understand the psychologist's point of view and how is the psychologist to appreciate the pediatrician's problems? Obviously, study and mutual participation in work with children are the best means. It has been my good fortune to serve on the educational council of the public schools of my

community for the past few years. This council is composed, except for another pediatrician and myself, entirely of psychologists, psychiatrists and psychiatric social workers. I might add that the pediatric component was added by the board of education to balance the innovations of the psychologists. The council examines children who present physical, mental or academic problems, and advises as to their management. The work was undertaken with a great deal of interest on my part, as it afforded an opportunity to see at first hand the internal workings of a psychologic group. The relationship has been most happy as far as I am concerned. The problems have been fascinating and instructive for me in daily practice. Nomenclature is gradually becoming familiar, and respect for diligent intellect is rapidly supplanting my ignorance about the mental hygienists' activities. The weekly staff meeting of the council has become an educational factor of first importance to me.

The aims and ambitions of the psychiatrists with whom I have come in contact have merged with those of the pediatricians without serious conflict whenever questions were mutually discussed. While the subject of sex has frequently been raised, it has always been handled in a sensible and rational manner without undue emphasis. Nor has the psychiatrist feared to meet this concept when it seemed to be of importance, as of course it often is. Widespread cooperation of this sort will be necessary before the pediatrician can learn enough of mental hygiene to talk intelligently on the subject, or before the psychiatrist can learn enough of pediatric problems to appreciate the full significance of the rôle of mental hygiene. Physicians and psychiatrists should be eager to enter into mutual projects if only as a means of becoming better understood. We must be honest enough to meet each other on the basis of our achievements, not of our reputations. As psychologists, most pediatricians have few accomplishments; as physicians, the mental hygienists have as few. Our positions therefore should be mutually instructive. Fortunately, a group of pediatrically trained psychiatrists is gradually developing whose advice should be of utmost value.

What can the rest of us do now to foster the mental health of our patients? We cannot all become psychiatrists overnight or eventually, and nothing could be worse than to turn loose thousands of insufficiently trained men on the poor children. It seems to me there is one type of work that we can do, however, and that no one else has the opportunity to accomplish. We can help materially to develop in parents and nurses proper attitudes toward children and their problems. The creation of proper attitudes is far more important from a practical point of view than is the dissemination of facts about psychology, because the person with the proper attitude will naturally do the correct thing in meeting difficulties, whereas the one with mere knowledge of principles will have to think before acting, a disastrous necessity in the situations that so frequently arise in any family. Much wasted effort is due to lack of recognition of this point.

It should be easy for the physician to teach people a natural attitude toward the growth of children. Children are not manufactured by adults either before or after birth but grow progressively from conception on through life. For a mother to realize the implications in the fact that she did not and can not make a baby, that the child grows just as a plant, means that she has developed an attitude of incalculable importance. She can then busy herself in providing the proper soil and nourishment for this growth without harmful and futile efforts at shaping individuals to fit into prearranged patterns. By emphasizing the simple fact of individual growth, it should be possible to show every mother the tremendous importance of her task in providing the proper environment, as opposed to the futility of her efforts in modeling.

We can be of great assistance by developing in parents an attitude of confidence in the child's safety. At least we can see to it that no word of ours inspires unnecessary fear. Physicians, nurses and allied workers have not been altogether innocent of the charge that in their efforts to foster good health they have inspired fear. It is unnecessary to paint a lurid picture of diphtheria in order to do preventive work. It is unnecessary to imply that all children will become malnourished if they do not comply with the letter of medical law. I feel very strongly that in the position of adviser the pediatrician should adopt a temperate attitude, giving helpful suggestions rather than dictatorial commands. The latter inevitably breed fear and this has its definite bad effect on the physical and mental health of the child.

It would be of great value if parents could be helped to assume the attitude that in their children there is no sin. Children are born as little animals with instincts and desires, which they did not ask to have given them. Environment hedges them round and about with countless impediments and hazards. It should in no way be considered sinful that the child tries to climb these fences. In fact, if such a situation does not give rise to friction, it is good evidence of the feeble will power of the child. In our contacts with parents we can easily point out this very obvious truth so that when children are brought in because of masturbation, tantrums, lying, stealing or any one of the countless complaints, the parents can be sent away with the assurance that the gates of the penitentiary or asylum are not agape for their children. To establish these three attitudes in the public mind would be an accomplishment in fostering mental health of children so great that the work of the mental hygienists would be materially reduced.

It would seem, in looking back over these few of our many problems, that there is still much ahead for the physician interested in children. In view of the pressing nature of many of the problems, the question arises as to how to speed up the work, as to the mechanism of progress. True progress is quickly attainable only through the close cooperation of two indispensable factions, which are often found too antagonistic, the conservatives and the progressives. The progressive turn of mind is continually objecting to the prescribed order and darting out into the unknown in an effort to find new truths. Without the progressive thinker, nothing new is achieved. The conservative tends to be satisfied with consolidating the known facts and applying them. The progressive represents the active, seeking force; the conservative, the passive, judicial weight. The progressive makes many mistakes in consummating his brilliant discoveries. The conservative exerts his power in counteracting these mistakes or false starts, though he may himself make serious errors in estimating the value of new concepts. True progress can be extremely rapid when these two factions are in close accord, when the progressive thinker has the advantage of conservative judgment, and when the conservative is stimulated by the challenge of new ideas.

Progress is inevitably delayed when the progressive looks on the conservative as an old fogy or when the conservative deprecates the enthusiastic sallies of the progressive. Mutual understanding between the two factions is a stimulating and indispensable force in the attainment of new truths. My purpose in mentioning this is to point out that at the present time pediatrics is amply supplied with both types of minds. It has always had the progressives, else the group would never have started, and time has developed the conservatives. Through their cooperation the next decade should furnish noteworthy advances. These problems of the future are presented with the utmost optimism for I have felt, in my few years of association with the group of physicians who have developed this organization, a most warm and kindly sense of cooperation. Neither numbers nor brains are lacking, and the will to learn and to serve will be sufficient impetus to bring to a successful conclusion these efforts to develop not only healthier children but also happier human beings.

THE PHYSICIAN AS HEALTH WORKER *

L. O. GEIB, M.D.
AND
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DETROIT

The health department inaugurated in Detroit in 1928 a program of participation by the general medical practitioner in official public health procedure the ultimate objective of which was to secure the sympathetic and whole hearted support of the medical profession in order that the general practitioner might not only practice curative medicine but actively take his part and share his responsibility in the preventive medical program. A campaign to secure protection against diphtheria, for young children, more especially the preschool child, was used to interest and stimulate response from the general practitioner. A review of the work accomplished prior to October, 1930, has been published.[1] Our purpose here is to reaffirm the objectives of the undertaking and to report progress which has been made during the last six months.

In Detroit, as elsewhere, the health department has maintained public health clinics over a period of years, with the purpose of teaching prenatal care to the expectant mother, furnishing instruction to promote infant welfare and preschool and school hygiene, supplying information to those who have been exposed to such communicable diseases as tuberculosis and the venereal diseases, and providing prophylaxis against smallpox and diphtheria. We believe that such clinics have an educational value and are needed during a period of demonstration. Beyond this, there is no justification for their existence except to take care of that small fraction of the population which is always indigent or nearly indigent. Preventive medicine can best be administered through the agency of a medical profession which has been thoroughly enlightened with regard to the practice of disease prevention, a profession which can become keenly alert to its responsibility and ably prepared to play its part in the conservation of the public health and welfare. Any health department which does not organize itself to make available through the office of the family physician the facilities now recognized as available to the modern health department is missing its opportunity. In Detroit, 1,100 physicians became actively interested in preventive medicine. The value of this addition to the roster of public health workers can easily be appreciated. Fundamentally, the problem is one of preparing the public for the service which may be rendered by the physician and at the same time preparing the physician to give the type of service to which the public is entitled.

Every step in the Detroit program has been worked out with the sympathetic support of the Wayne County Medical Society, and all new developments have been submitted to the public health committee of this society for its approval, prior to final adoption by the health department. The public health educational program, including popular education and field nursing service, has been furnished by the department of health. In cooperation with the medical society, a postgraduate conference in medical education has now been conducted for two years. During the last winter, at ten conferences on communicable disease control, there was an average attendance of 235 physicians and, all told, one third of the membership of the medical society attended some one of the lectures. This has created a sympathetic profession and has not only served as a forum of instruction in modern preventive medicine but has had the added effect of making better diagnosticians of the physicians and assisting in making more widespread, current knowledge concerning the treatment of the communicable diseases. The medical conferences have been built around the personnel of the communicable disease hospital, whose clinical facilities and staff have been drawn on freely.

As already stated, diphtheria protection was chosen as the field in which to make a beginning in our program of medical participation. In 1928, all free diphtheria immunization clinics were abandoned by the department of health, and since that time all treatments have been given in the office of the private physician. There have been no immunizations in the infant or preschool clinics, which have been continued, however, as demonstration centers for the teaching of hygiene and for the relief of indigent families. If a health department merely abandons its diphtheria clinics and without further effort transfers the responsibility to the medical profession, failure will result; but, if the health department continues its educational program and directs and assists the medical profession through its organized society, sucess will be attained. There are now 1,100 physicians in Detroit, or approximately 90 per cent of all, who would be interested in such a program, who are enrolled as cooperating physicians in the diphtheria prevention campaign. The results up to June 1 of this year indicate that 80 per cent of our school children and 70 per cent of the preschool group have received protection against diphtheria. This accomplishment has been made with the cooperation of the practitioner of medicine, without any free clinics maintained by a health department.

The factors that have contributed most in bringing this about have been: first, continuous contact between the health department and the public health committee of the medical society, which has met weekly; second, postgraduate medical conferences in communicable diseases, which have been held weekly during the winter months; third, the employment of medical coordina-

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 11, 1931.

1. Vaughan, H. F., and Buck, C. E.: Diphtheria Prevention in Detroit, Am. J. Pub. Health **21**: 751 (July) 1931.

tors, who have visited in their office those physicians who never or seldom attend medical meetings of any character; fourth, the inauguration of a program of popular health instruction maintained by the health department, and, fifth, a system of home visitation and instruction of parents by public health nurses.

In the fall of 1929 a communication sent jointly by the medical society and the health department was addressed to every physician, inquiring whether he would cooperate in the campaign by setting aside definite hours at which he would receive at his office, children in need of protection. It was agreed that the physician would charge $1 for each dose of toxin-antitoxin or toxoid in those cases in which, in the physician's judgment, the parents were able to pay for the service. The charge for the Schick test and the reading of the results would likewise be $1, making a total charge of $4 for the service. There was nothing in this plan that would prevent the physician from charging his usual office fee if the patient appeared at any hour other than that specified in the agreement. It was further agreed that when, in the physician's judgment, the parent was unable or unwilling to pay for the service, the health department would reimburse the physician at the rate of 50 cents for each treatment and $1 for the Schick test, or a total of $2.50 for the complete service to each child.

The first communication brought response from nearly 700 physicians, who, almost without exception, were not only willing to cooperate but enthusiastic over the program. Within the next few months, the number of cooperating physicians increased to 900 and, by the addition of the medical coordinators, who visited physicians who were not thoroughly informed concerning the program, the number of cooperating men has increased to 1,100.

Representatives of the public health committee and of the health department attended with regularity the meetings of the district societies and on every possible occasion advertised to the physicians the purpose of the campaign, laying particular stress on the point that an effort was being made to eliminate free clinics. The enterprise was heralded as an experiment which, if it succeeded, would gradually transfer many of the clinic responsibilities of the health department to the office of the physician but which, if it failed, would result in the reestablishment of free clinics by the department of health.

The city was divided into thirty-five districts, and a card was prepared for each district, listing the name and office address of each cooperating physician and designating the hours at which he would receive children for immunization. The physician's name was placed on the list for the district in which his office was located, with the exception of those whose offices were in the downtown area, in which case the physician's name was placed on the list for the district in which the physician resided. These lists were used for the convenience of contacting patient and physician and, more especially, by the public health nurses, who later canvassed the entire city.

To bring about the protection of a large number of children involves three-cornered cooperation between the public, the medical profession and the department of health. The health department must instruct the parents and must likewise prepare the medical profession. Once the parent has learned what service to expect and the value of such service, and has also learned how much it will cost, one can at least be assured of the cooperation of the intelligent members of the community. We do not believe that it will be possible under any circumstances to secure 100 per cent cooperation and 100 per cent protection against diphtheria but, if we can protect from 70 to 80 per cent of young children against this disease, it is reasonable to anticipate that there will result a diminution in the death rate.

The toxin-antitoxin and, later, toxoid, were available to physicians at eight of the culture stations located in different parts of the city, lists of which were sent to all cooperating physicians. At the time this material was obtained, the physician also took a supply of postcards addressed to the health department, on which he reported the name, address and age of each child treated and indicated whether it was a first, second or third dose. There were similar cards on which was reported the Schick test. The number immunized is indicated by those reports. The record has not been based, as is so frequently done in other cities, on the amount of material distributed, but represents a card on file in the offices of the health department, giving full information concerning each child. Later, when the physician sends in his monthly statement for the treatment of indigent cases, his statement is checked against the postcard record and payment is not made to the physician unless a record has been received at the health department. The physicians have not found this a burden and there has been no complaint with regard to the system of reporting. In no other way can the value of the campaign be determined. Complete and accurate records are essential.

During the first few months of the intensive drive to stimulate public interest, the educational propaganda necessary to give impetus to the work included newspaper stories, paid advertisements, posters, lectures, billboard advertising, radio talks, and the generous distribution of literature. The results were not noteworthy and it was found that we reached approximately 18 to 20 per cent of the children whom we estimated as being in need of service. The plan was then conceived of expanding the educational program by having a house-to-house canvass made by public health nurses. This was first tried in the spring of 1930 in an experimental fashion. Two large districts of the city were chosen in which diphtheria had been unusually prevalent and severe. In these districts, which comprised 18.3 per cent of the city's population, 26 per cent of the diphtheria cases and 31 per cent of the deaths occurred in 1929. The objective was to protect children between the ages of 6 months and 10 years. An average of forty-five nurses devoted their entire time for two months to this project and, at the conclusion of this experiment, 63 per cent of the children residing in these districts had received protective treatments. This work was so encouraging that, in the fall of 1930, 112 nurses were assigned to a canvass of the entire city. For four months these health educators devoted their whole time to this work and canvassed a total of 163,403 families, of which number 94,539 had children between the ages of 6 months and 10 years. There were 68,864 families without children of these ages. There were also some 88,557 return visits, bringing the grand total of calls to 251,960.

Among the 94,539 families with children, educational contact was made with 168,828 children, of which

number 10,040 were under 1 year of age, 81,412 were from 1 to 5 inclusive, and 77,376 were from 6 to 10 inclusive.

At the time of the first nursing visit, it was found that 1,556 of the 10,040 infants, or 15.5 per cent, had previously received the protective treatment. Also, 35,424 of the 81,412 children from 1 to 5, or 43.5 per cent, had been previously protected. In the school group (from 6 to 10) 45,891 of the 77,376, or 59.3 per cent, had been previously protected. For the entire group, including the infants, preschool and school children, 82,871 of the 168,828, or 49.1 per cent, had been protected.

TABLE 1.—*Children Immunized After First Nursing Visit*

Age Group	No.	Per Cent
Infant (under 1 year)	3,679	43.3
Preschool (1 to 5 inclusive)	21,844	47.6
School (6 to 10 inclusive)	15,364	48.8
Total (6 mo. to 10 yr. inclusive)	40,887	47.6

The figures in table 1 give the number protected as a result of the nurses' educational effort, all of the work, of course, being performed by private physicians in their offices. The percentage is based on the residue after subtracting those who had been protected prior to the nurse's visit.

The figures in table 2 give the total number immunized at the end of the educational campaign. The percentage is based, of course, on the total number of children included in the investigation.

This gives a rather accurate picture of the percentage of children immunized in the city as a whole, as the nursing canvass covered practically the entire city.

Table 3 shows the number immunized by single age groups.

Especially impressive is the fact that 52 per cent of the infants between the ages of 6 months and 1 year have been protected and that 70 per cent of the preschool children have received their treatments. As 70 per cent of the diphtheria deaths occur before the school age, the value of early immunization is apparent.

In contrast to free clinics, the Detroit plan, which virtually makes a health center of each physician's office, has increased the number of immunizations in

TABLE 2.—*Children Immunized at End of Educational Campaign*

Age Group	No.	Per Cent
Infant	5,235	52.1
Preschool	57,268	70.3
School	61,255	79.1
Total	123,758	73.3

the early age groups. It is comparatively easy for the mother to take a child of tender age to the doctor whose office is only a few blocks from her home. She hesitates to travel a considerable distance to a clinic, even though it is a free one.

During the recent campaign in Detroit, more than $100,000 was paid the cooperating physicians. The average expenditure was $142 per physician. It is estimated that, including the cost of the nursing personnel and the educational work, nearly $250,000 was expended in the campaign, which is less than the cost of medical care of reported diphtheria cases for a single year. However, it is not fair to charge the entire expenditure to diphtheria prevention. The expense may more fairly be charged against a program to rehabilitate the public with the family physician, to recreate an attitude whereby the layman will look to the physician as a family counselor not only in matters of curative but likewise of preventive medicine.

We feel that the campaign to reduce the incidence of diphtheria is but an entering wedge into a program which will involve a periodic health examination, prenatal service for the expectant mother and hygienic instruction for infants and children, as well as campaigns to control tuberculosis, cancer and other preventable diseases. The interest of the medical profession has been activated. The doctor is not interested merely for monetary reasons but is sincerely endeavoring to cooperate with the health department in the reduction of unnecessary sickness. We believe that a beginning has been made in an administrative program which will include the family physician in the program of every well organized health department.

SUMMARY

The program that has been inaugurated in Detroit has (1) secured the protection of 70 per cent of preschool children and 80 per cent of school children against diphtheria, without the use of free clinics; (2) reduced the diphtheria death rate to one fourth of the level existing prior to the beginning of the campaign; (3) provided for postgraduate conferences on communicable disease control; (4) completely changed the attitude of the medical profession toward the work of the health department and, more especially, eliminated the antagonistic feeling that has frequently existed toward the work of the public health nurse; (5) stimulated parental responsibility for the care of the child; (6) provided compensation to physicians for service rendered to the indigent; (7) actually served as a beginning to make a health center of the office of each physician, and (8) afforded an opportunity to expand the program of health conservation with medical cooperation into other fields, such as tuberculosis and cancer control, periodic physical examinations, and the health of mothers and infants.

Detroit Department of Health.

TABLE 3.—*Age Groups*

Classification	Age	No.	Total
Infant	6 mo.-1 yr.	3,679	3,679
Preschool	1 year	4,240	
	2 years	4,430	
	3 years	4,680	
	4 years	4,190	
	5 years	4,304	21,844
School	6 years	3,790	
	7 years	3,570	
	8 years	3,320	
	9 years	2,780	
	10 years	1,904	15,364

ABSTRACT OF DISCUSSION

DR. D. CHESTER BROWN, Danbury, Conn.: I wish I could adequately express my appreciation to Drs. Geib and Vaughan for this paper, which is so sympathetic with the work of the practicing physician, and from the standpoint of the public. Naturally, when the physician is considered as a health worker he immediately falls into one of three classes: First, he is the discoverer, the investigator, perhaps in pure science or as a clinician led along by clinical suggestion. Then there is the physician who evaluates this work as to safety and as to

efficiency. He is really the health officer, the state having devised a department that should be especially entrusted with the public health conditions which do not enter into the application of those principles that are the practice of medicine, but authoritatively approves of acceptable methods of prevention. The third group consists of the practicing physician who studies the individual and applies the proper preventive or therapeutic measures. I was particularly interested in the fact that the general practitioner, the one in the practice of medicine at large, was not receiving the help from this section, and this group of men, who are public health officers, that they might well receive. Why this group should be segregated from the other sections is, to my mind, a question. I was particularly interested, at this time, in the White House Conference, which is so strongly in our minds that we might bring about an exhibit from this section in the Scientific Exhibit. I would like to suggest that, when nominations are being considered for officers, the advisability of taking up a program of cooperation with the Scientific Exhibit and with the different sections of the organization be considered; also the advisability of bringing about symposiums first with one section and then with another. As a symposium is held with a section, whether it is surgery or medicine or pediatrics, this section might take the initiative and place in the Scientific Exhibit an exhibition that will bring prominently before those who do not get into those sections for deliberation this intensely interesting and important work of preventive medicine, which hasn't been sufficiently brought to the attention of the general practitioner.

DR. JOHN A. FERRELL, New York: This epoch making demonstration in the health field through the enthusiastic cooperation of physicians and health workers in Detroit has been presented in a forceful manner. It is gratifying to have such proof that physicians and health workers can serve side by side in harmony in a common community project and that in prosperous communities, at least, it is now practicable to compensate physicians for practicing prevention either privately or to the extent necessary with public funds. When physicians and health workers fully realize that they have a common interest, the outlook for better health and disease prevention will be brighter. This work in Detroit will undoubtedly lead to a broader cooperative program. I congratulate the authors and all others who have participated in the project.

DR. H. G. GRANT, Richmond, Va.: I want to congratulate the authors on this apparently successful effort to get practicing physicians into public health. At the same time I should like to ask from the standpoint of what might be called public health economics just what they would figure out the cost per child immunized, taking into account publicity, the employment of nurses, and the actual money paid out to physicians. I am not asking this in the spirit of criticism, because I believe that they have started a very fine thing.

DR. CHARLES B. MAITS, Pittsburgh: In Pittsburgh we have a very close relationship in the medical work in the schools and also in the preschool work between the health department and the board of public education. In fact, I know of no other city in the country where the cooperation between board and health department is so marked, and the relationship over a long period of years so cordial. It has worked to the mutual benefit of both the board and the health department. Drs. Geib and Vaughan have been able to sell their ideas in Detroit to their councilmen, very apparently. This is a problem that has been faced by all health officers when a new type of program, such as that of the authors, is successfully accomplished. Theirs is certainly an outstanding piece of work and will undoubtedly serve as a model of its kind for other communities to emulate. We tried a new scheme in our 1929 diphtheria prevention campaign in Pittsburgh. For three months we devoted our time exclusively to educating the people in diphtheria prevention. We provided toxin-antitoxin free for the physicians and made it available to them close to their offices in each district of the city. We secured considerable publicity through the press and gave numerous radio talks and talks by members of the health department to groups in the Parent-Teachers Association. During all this time, no toxin-antitoxin work was done by the health department. We regret to report that the percentage of immunization secured in this way was far below our expectation. Following this three months period, we opened the health department clinics for this work all over the city and in a month and a half secured a considerable percentage of immunization. This dual type of campaign was in the nature of an experiment. The results obtained were fair but not what we expected. Naturally, this was not the initial diphtheria prevention work in Pittsburgh, as the health department has provided for diphtheria prevention for school children since 1921. Drs. Geib and Vaughan are to be congratulated on the success of their campaign and, indeed, if the medical profession could be aroused to the possibilities of this work, I believe it could be put into effect successfully in many other communities. It takes a very comprehensive program of health education, including not only the parents and the medical profession but also those officials who hold the communities' purse strings. It must be shown to them that money spent in this way is well spent and will bring worthy returns.

DR. HENRY F. VAUGHAN, Detroit: First, may we answer the question about costs? The cost of this work cannot be charged against diphtheria immunization, as we tried to make clear. If one had free clinics one could immunize children for 50 cents or 75 cents, including the nursing service. We find that we paid physicians for approximately two thirds of the immunizations. We told the physician not to be severe in determining whether the parent could or could not pay. We sold him the idea that he was making new contacts, and even though some people came in who could have paid and didn't pay it was a good investment. The actual cost figure is $2 a child, paid the physicians; if one includes the nursing and educational work, I presume it would be about $4 an immunization. That must be charged to health education and not diphtheria prevention. Dr. Maits has brought out a highly important matter in the question of selling the idea to one's appropriating body. That is equally difficult, of course. We were fortunate in being able to do that and at no time was the question ever raised of the amount of money we were going to spend. The only question was on the results. We started out with $5,000 to pay physicians, and during the year we spent $120,000. We increased the $5,000 appropriation to $120,000. We estimate this year that the cost of payment to physicians will not be nearly so high. We have gone through the first difficulties and now it is merely a matter of taking care of children as they arrive. We have, in our budget, a definite appropriation of $45,000 to pay physicians for this work. As an administrator, one must balance one activity against another. If one has money that is going into less profitable ventures, one must divert to this type of medical cooperation and it will be found profitable. We decreased the number of nurses in our school work during the first half of the year merely to stamp out diphtheria. When one gets rid of diphtheria or diminishes its prevalence, there will be more nurses to put back into physical examinations. After all, it is an administrative problem of balancing one's program and educating one's appropriating bodies. At the present time, instead of taking a large group of nurses and canvassing from house to house, we have inaugurated a program whereby we visit each new-born child twice in the first six months of life. We visit the child as soon after birth as possible, or the parent, and then again at six months. That, of course, is not directed solely at diphtheria immunization but at general infant welfare and the teaching of hygiene. But it is going to keep up a continuous process of prodding parents to have the children protected against diphtheria.

Bacteriophagy and Bacillary Dysentery.—From 1919 onward I have made experiments upon patients affected with bacillary dysentery, causing each patient to ingest 2 cc. of a culture of bacteriophage having a high virulence for dysentery bacilli. In all cases, without exception, all of the morbid symptoms disappeared within a few hours, in from four to twenty according to the case, and the next day the patient was definitely convalescent. Since that time this method of treatment has been applied on a large scale, principally in the Sudan and in Brazil. . . . I must admit that several experimenters have not obtained the same favorable results. As we shall see later, the power of the phage utilized for the treatment is an essential factor of success.—d'Herelle, Felix: An Address on Bacteriophagy and Recovery from Infectious Diseases, *Canad. M. A. J.*, May, 1931.

ANTIRACHITIC POTENCY OF THE MILK OF COWS FED IRRADIATED YEAST OR ERGOSTEROL

A CLINICAL TEST *

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Although the incidence and severity of rickets in the United States has decreased in the course of the last five or ten years, it must not be thought that it has become a negligible disorder. A clinical survey of rickets which we carried out this winter among the poor who attend the child health stations showed that fully half of the white infants and approximately three fourths of the Negro infants have definite signs of rickets. If we confine our survey to the type of rickets that is demonstrable roentgenographically, these figures fall to about 15 per cent among the white and 30 per cent among the Negro infants. However, roentgenographic rickets must be regarded as rickets in the moderate stage, for mild rickets presents no evidence of alterations at the epiphyses.

Rickets is perhaps the only disease in which embarrassment is occasioned by the very multiplicity of therapeutic agents. At least a half dozen remedies are specific for this disorder. There are cod liver oil, its nonsaponifiable fraction, direct irradiation of the body with ultraviolet rays, irradiated ergosterol (viosterol), combinations of viosterol and cod liver oil, irradiated dry and fluid milk and further modifications of these agents. For many years cod liver oil was the most popular remedy, even before its efficacy had been clearly proved or definitely accepted. After a test of many years it would seem that its disagreeable taste and odor precludes its universal adoption; the fact that mothers dislike to give it to their infants precludes its general application. This winter we found that a large number of mothers attending the clinics did not give their infants cod liver oil although repeatedly urged to do so by the physicians and nurses in charge and, furthermore, that only five were giving the requisite dose of 3 teaspoonfuls (15 Gm.) a day; many gave only ten drops or a half teaspoonful daily. Another drawback and partial disqualification attached to many of the antirachitic remedies is their expense, a disadvantage which is all the more important during times of economic stress. The main disadvantage attached to these therapeutic measures is, however, that they depend necessarily on the cooperation and good will of the mother and are not automatic in action.

The merit of the method which we are bringing forward is that it does not require cooperation on the part of the mother, as the antirachitic factor is included in the food of the infant. In this respect it is similar to irradiated milk. The idea of activating milk by means of giving an antirachitic agent to the cow is in no sense a new one. As early as 1924, Lesné and Vagliano [1] gave cod liver oil to cows and subsequently fed the milk to infants. Golding and his co-workers [2] found that a supplement of cod liver oil increased the antirachitic potency of milk to a twofold degree but that, oddly enough, it reduced the fat content of milk. Irradiated yeast has likewise been used to this end. Wachtel,[3] as well as Steenbock and Hart,[4] have resorted to this method for either fortifying the milk or bringing about a positive balance of calcium and phosphorus in the cow. Recently Krauss and Bethke [5] have added irradiated ergosterol (viosterol) to the fodder of cows and in this way enhanced the antirachitic potency of the milk. As far as we are aware, the first test of irradiated yeast in infant feeding was one carried out some years ago by Hess and Weinstock.[6] Kon [7] made use of irradiated yeast in Warsaw, Poland, and reported favorable results even among the severe cases of infantile rickets which are common in that city. We may add that Maxwell is trying to make a test of irradiated yeast for osteomalacia in China.

Our experiment was carried out on cows in a large model dairy herd. The cows comprised Holsteins, Jerseys and Guernseys, which produced from 30 to 40 pounds of milk daily on a three-time milking schedule. They were all kept in one barn and received as a basal ration 30 pounds of ensilage, 12 pounds of corn concentrate, 12 pounds of alfalfa hay and 4 pounds of beet pulp. They were divided into five groups, two of which received fodder supplemented with irradiated ergosterol, two fodder supplemented with irradiated yeast and one serving as a control; there were also nine cows that were held as "replacements" in the event that one or more of the experimental animals should have to be withdrawn. The cows were at all times confined to their stalls so that we could be certain that sunlight played no rôle in the result; they were exercised in the evenings. One group received the equivalent of 100,000 rat units of irradiated ergosterol, in the form of viosterol, which is a solution of this sterol in corn oil. Another group received 200,000 rat units of viosterol. Two other groups were given supplements of irradiated dried brewers' yeast, the one the equivalent of 30,000 rat units a day and the other the equivalent of 60,000 rat units. The fifth group, which served as a control, received merely the basal ration. The supplements of viosterol as well as of irradiated yeast were thoroughly mixed with the ration and at all times care was taken that all the fodder was consumed. The milk of these cows was used for infant feeding tests after the supplements had been fed for about a month.

At the beginning of January 102 infants, four groups of about 25, were given the milk from these cows, two of the groups receiving the "irradiated ergosterol milk" and two the "yeast milk." The infants were from 1½ to 6 months of age and were selected from those attending two of the large department of health baby clinics in New York. Before the test was begun, a careful clinical examination was carried out with

* Read before the Section on Diseases of Children at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 11, 1931.

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especial attention to the presence of signs of rickets. The infants were weighed regularly and roentgenograms of the wrists were taken when there was any question as to the presence of rickets. Throughout the entire period careful follow-up work was carried out by a full time nurse whom the commissioner of health was good enough to assign for this investigation. The formulas were not changed, the infants receiving an average of about 1½ pints (750 cc.) of milk daily with orange juice in addition and cereal and vegetables for the older children. Thirty-three of the infants had previously been getting cod liver oil, twenty-three of the preventive group and ten of the rachitic group, but this was discontinued, although the amounts were so small as to be inconsequential. Twenty-three infants were Negroes, mostly Porto Ricans, and seventy-nine were white, many of them of Italian parentage. The test was carried out for a period of three months, being discontinued, as far as the present survey is concerned, at the end of March, at which time roentgenograms of the wrists of all the infants were taken. However, most of the infants will continue to receive the milk throughout the summer. Although the main object of the investigation was the prevention of rickets it also afforded an opportunity for a curative test, as, at the outset, thirteen infants were found to have roentgenologic rickets and thirty-six some evidence of clinical rickets.

The results were clear cut and may be summarized in a few words. Of the four test milks all except the weaker "yeast milk" were found, almost without exception, to prevent as well as to cure rickets; in two instances roentgenologic rickets developed in spite of the fact that the weaker yeast milk had been given and in two other instances this milk failed to bring about recalcification of the rachitic epiphyses.[8] Not only were the epiphyses of the infants receiving the various milks fully as well calcified as those of normal infants at this season of the year, but many showed superior calcification (figs. 1 and 2). In this connection, however, it should be pointed out that no antirachitic agent is able absolutely to prevent rickets, if the disorder is judged by the most delicate clinical criteria. Beading of the ribs as well as craniotabes will occur occasionally in spite of adequate doses of cod liver oil, of viosterol or of this milk, which may be termed "biologically activated." The fact that such is the case has, for many years, been considered by one of us as one argument against regarding the antirachitic factor as a true vitamin. The thirteen cases which at the outset gave evidence of rickets by roentgenogram are summarized in table 1. It will be noted

TABLE 1.—*Curative Effect of "Biologically Activated Milks" on Infants Manifesting Rickets by Roentgenogram*

Type of Milk	Name	Age, Months	Weight, Pounds	Date	Beading	Craniotabes	Enlarged Epiphyses	Roentgenogram	
								Date	Rickets
Irradiated yeast (one-half strength)	J. C.	5	14¾	12/29	+±	—	—	1/12	Moderate
		7	16¾	2/21	++	—	+	2/10	Healing
		8	17½	3/23	+	—	+	3/ 6	Healing marked
								3/25	Healing marked
	G. S.*	5	14½	1/ 5	+	+	—	1/15	Slight
		6½	15¼	2/16	+	—	+	2/10	Moderate
		7½	16¼	3/13	+±	—	+	3/ 8	Marked
								3/25	Marked; slight healing
	E. W.*	6	16¼	1/ 3	+	+	+	1/ 7	Moderate
				2/25	++	—	+	2/19	Worse; slight healing
		8½	19	3/13	+±†	—	+	3/ 4	Marked; good healing
Irradiated yeast (full strength)	G. R.*	2¾	10¾	12/24	+	+	—	1/ 7	Slight
		4¾	13¾	2/27	+†	+	—	2/17	Healed
		5¾	14¾	3/30	+†	+	+	3/ 4	Normal
								3/25	Normal
	R. S.*	5	16	1/ 5	+±	+	+	1/15	Moderate
		6½	17⅛	2/16	+±	++	+	2/19	Healing
		7¾	18	3/23	++†	+	+	3/ 6	Healing marked
	R. D.	5	14¼	1/ 5	++	—	+	1/12	Moderate
		6½	17	2/16	++	—	+	2/10	Healing
								3/ 6	Healed
Viosterol (one half strength)	H. L.*	2¾	12	12/29	+	++	—	1/12	Slight
		3¾	15	2/21	++	—	—	2/17	Healing marked
		4½	16	3/16	++	—	+	3/ 6	Healing increased
								3/25	Normal
	J. M.*	6½	15¼	1/ 3	+	—	—	1/10	Slight
		8	17⅞	2/27	+	—	—	2/19	Healing
		9	19¼	3/30	—	—	—	3/ 4	Normal
								3/27	Normal
Viosterol (full strength)	T. M.	5	13⅛	12/31	+±	—	—	1/ 7	Slight
		6	14⅝	2/27	+±†	—	—	2/19	Healing
		7	16	3/30	+±†	—	—	3/ 6	Normal
	H. M.*	4½	15	12/29	+±	+	+	1/12	Moderate
		6½	18¾	2/21	+	—	+	2/19	Healing
		7½	20¼	3/20	+	—	+	3/ 6	Healing increased
								3/25	Normal
	F. R.	3	10⅔	12/31	+	++	—	1/10	Slight
		5	15	2/27	+†	—	—	3/20	Normal
	V. R.	4	13¼	12/24	++	++	—	1/ 7	Slight
		6	17	2/27	+±†	—	+	2/10	Healing
		7	18	3/27	++†	—	—	3/ 6	Normal
								3/25	Normal
	A. D.	4	13¾	1/ 3	+	+	—	1/ 7	Slight
		5¾	15¼	2/27	++†	++	—	2/10	Healing
		6¾	17	3/30	++†	++	—	3/ 3	Normal

* Negro. † Angular beading.

8. One child developed rickets while receiving the stronger ergosterol milk. This infant, 2 months of age in January, made an exceptional gain during the period of observation—76 ounces (2,280 Gm.) in the course of fifty-five days. He developed "very slight rickets with slight healing" as noted by a roentgenogram taken at the beginning of March; twenty days later the picture was normal.

that in almost all instances healing was brought about by means of the milks but that, as stated, there were two instances of failure to heal when the "half strength" irradiated yeast milk was given. The curative effect of both the irradiated ergosterol and the irradiated yeast milks is well brought out in figures 3 and 4. In judging of the healing properties of these agents by roentgenograms we have taken into account the length of time that was required to bring about calcification. As is well known, the time factor is of great moment in estimating the potency of antirachitic agents; in fact, it is clearly laid down in all methods of standardization. Bills has shown that twice as many rat units of viosterol are required to bring about healing in five days as in ten days. This factor, however, has been entirely disregarded in appraising healing in infantile rickets. We believe that it might be well to set one month as the standard time unit in judging the curative effect of antirachitic agents in infantile rickets.

Fig. 1.—Maintenance of good calcification of epiphyses throughout winter.

It was found that the larger amount of viosterol had approximately the same efficacy, in regard both to protection and to cure, as the larger amount of irradiated yeast. In spite of the fact that the former represented a supplement of 200,000 rat units to the daily ration of the cow and the latter only 60,000 rat units, no difference could be observed in their therapeutic effect. Of the sixteen infants given the full strength yeast milk, ten were white and six were Negroes; in no instance did roentgenologic rickets develop, in spite of the fact that the Negro group included a set of twins and a very young infant which gained 83 ounces (2,490 Gm.) in fifty-nine days. It should be added that beading of the ribs developed in six children, three of whom were Negroes, and that craniotabes was noted in four, all of whom were Negroes. A survey of the seventeen infants who were given the full strength viosterol milk shows a similar result; in other words, successful protection against roentgenologic rickets but incomplete prevention against the development of the milder manifestations.

TABLE 2.—*Biologic Tests of Various Milks*

Supplement to Cow's Ration	Number of Rat Units	Butter-Fat Fed in Ten Day Tests, Gm.	Line Test Rating
		4.0	Trace to 3+
		8.0*	1 to 3+
Viosterol	100,000	0.25	Trace to 2+
		0.5*	3 to 4+
		1.0	4+
Viosterol	200,000	0.25*	2 to 4+
		0.5	3 to 4+
		1.0	4+
		0.25	Trace to 2+
Irradiated yeast	30,000	0.5*	3 to 4+
		1.0	3 to 4+
		2.0	4+
Irradiated yeast	60,000	0.25*	2 to 3+
		0.5	3 to 4+
		1.0	4+

The four varieties of milk were tested biologically on rats according to the standard procedure. Butter-fat was made from the milks and, after having been filtered, was fed at various levels to young rats which had been receiving the Steenbock rickets-producing ration. The total amounts of butter-fat that were given in ten day periods and the results of the "line test" after this period are presented in summary in table 2. It will be noted that only half as much (0.25 Gm.) of the stronger viosterol milk was required as of the weaker viosterol milk and, again, only half as much of the stronger irradiated yeast milk (0.25 Gm.) as of the weaker yeast milk. These amounts may be termed the therapeutic units and run parallel to the absolute amounts of supplements which had been fed to the cows. The striking phenomenon, however, is that the stronger viosterol milk and the stronger irradiated yeast milk proved to have the same biologic potencies in spite of the fact that in the former case 200,000 rat units had been fed daily to the cows whereas only 60,000 rat units of the yeast had been given. In other words, the irradiated yeast proved three times as potent as the irradiated ergosterol. This is well illustrated in table 2 and has been drawn attention to in a preliminary note by two of us.[9]

TABLE 3.—*Dosage in Relation to Body Weight*

	Drops per Pound
20 drops viosterol to infant (15 pounds)	1.3
100,000 units viosterol to cow (1,000 pounds)	1.1
200,000 units viosterol to cow (1,000 pounds)	2.2
30,000 units irradiated yeast to cow (1,000 pounds)	0.34
60,000 units irradiated yeast to cow (1,000 pounds)	0.68

Table 3 gives the dosage of viosterol and of irradiated yeast in relation to the body weight of the cow as well as the therapeutic dose of viosterol in relation to the body weight of the infant. It will be noted that, from this point of view, the amounts given the cow were by no means excessive or even large. Indeed, the greater amount of irradiated yeast, the factor in which we are particularly interested, was only a little more than half as great as that which is given to an infant weighing 15 pounds (6.8 Kg.); if we place the dose of viosterol at 10 instead of 20 drops, the amounts, calculated in terms of body weight,

Fig. 2.—Maintenance of good calcification of epiphyses throughout winter.

9. Thomas, B. H., and MacLeod, F. L.: Science **73**: 618 (June 5) 1931.

become about the same for cow as for infant. It would seem, therefore, that the antirachitic factor is excreted in milk in high degree, a conclusion similar to that which one of us drew in 1926 as the result of direct irradiation of a lactating woman.

Some time ago Hess, Lewis and Rivkin [10] pointed out the fact that an amount of irradiated ergosterol, which, judged by the biologic test on the rat, should be equivalent to a certain amount of cod liver oil, was found insufficient to protect infants against rickets. On the basis of equal weight, an infant requires about eighty times as much irradiated ergosterol as a rat and about twenty times as much cod liver oil; in other

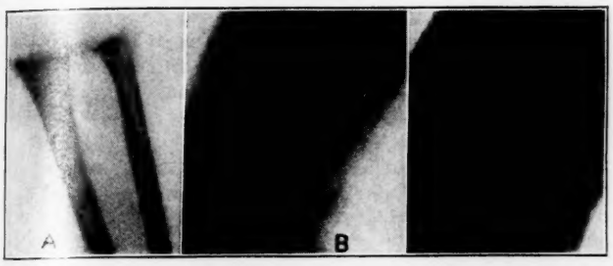

Fig. 3.—Healing of rickets brought about by "viosterol milk" after one month and two months. *A*, January 12; *B*, February 17; *C*, March 16.

words, the ratio between the activity of the two substances is about 4:1. This ratio has been found to represent approximately the relative excess of irradiated ergosterol required to protect infants from rickets. As stated, this difference can readily be compensated for and should not be construed as a drawback of irradiated ergosterol but merely as indicating a difference in pharmacologic activity. In view of these experiences, it is interesting to consider whether the "yeast milk," more especially the higher level, more closely resembled viosterol or cod liver oil. In view of the fact that we know that 1 Gm. of standard cod liver oil contains 13.3 rat units and that this yeast milk contains about 160 rat units per liter, this information can be readily ascertained. Table 4 shows the

TABLE 4.—*Comparative Potency of Milk in Terms of Viosterol and of Cod Liver Oil*

	Intake of Cow, Rat Units	Milk (1 Liter) in Terms of		
		Rat Units	Viosterol	Cod Liver Oil
Ergosterol	100,000	80	1 drop	6 Gm.
Ergosterol	200,000	160	2 drops	12 Gm.
Yeast	30,000	80	1 drop	6 Gm.
Yeast	60,000	160	2 drops	12 Gm.

comparative potency of all four milks in terms of viosterol as well as of cod liver oil. We wish to call attention more particularly to the milk from cows which received 60,000 units of irradiated yeast. It will be noted that this milk contains the equivalent of only 2 drops of viosterol to the liter and of 12 Gm. of cod liver oil. These figures are significant. Every one will agree that 2 drops of viosterol are absolutely insufficient to protect an infant from rickets, whereas 12 Gm. of cod liver oil confers a large degree of protection. It would seem, therefore, that yeast milk resembles cod liver oil rather than viosterol in its potency. In view of the fact that it has recently been pointed out by Hess and Supplee [11] and by Massengale and Nussmeier [12] that there is a marked distinction between the activity of cod liver oil and of irradiated ergosterol when tested on rats and on chickens, an investigation is being carried out to ascertain the activity of yeast milk on chickens.

In general terms it may be stated that 1 liter of yeast milk, 15 cc. of cod liver oil and 10 drops of standard viosterol are sufficient to protect the average infant from rickets. If we translate these figures into rat units it is found that their comparative potency is, respectively, 160, 200 and 830 units (table 5). This is a ratio of 1:1.25:5.2. These ratios indicate that for the protection against infantile rickets a smaller

TABLE 5.—*Comparative Dosage (Rat Units) of Various Antirachitic Agents*

Yeast Milk		Cod Liver Oil		Viosterol
160 (1 liter)		200 (15 cc.)		830 (10 drops)
1	:	1.25	:	5.2
1 unit = 6 cc.		70 mg.		0.3 mg. (1/83 drop)

number of rat units of yeast milk is required than of cod liver oil or of viosterol. In this connection it should be added that irradiated milk is also exceptionally potent in regard to the number of rat units which it contains per liter. This quality has been found to hold true even for milk that has been partially skimmed and subsequently dried by the roller process. In nursing women, direct irradiation of the body induces a similar high antirachitic titer of the milk.

The serum of the cows comprising the various groups was analyzed several times for its concentration of calcium and of inorganic phosphorus. It seems unnecessary to reproduce these analyses in a table. Suffice it to state that in every instance the serum was found to be of normal concentration; no instance of hypercalcemia was found. The butter-fat of the milks likewise was unaltered. The physical condition of the cows was, if anything, somewhat better than that of

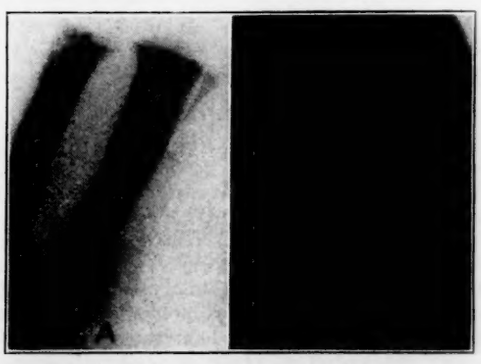

Fig. 4.—Healing of rickets brought about by "yeast milk" after one month; *A*, January 14; *B*, February 13.

the control animals which received merely the basal ration.

The method of obtaining a milk of high antirachitic potency by adding an antirachitic supplement to the fodder of cows would seem promising from a clinical point of view. The cost of irradiated yeast is not great and will of course become much less if this product is used on a large scale. Even at present this

10. Hess, A. F.; Lewis, J. M., and Rivkin, Helen: Newer Aspects of the Therapeutics of Viosterol (Irradiated Ergosterol), J. A. M. A. **94**: 1885 (June 14) 1930.

11. Hess, A. F., and Supplee, G. C.: Proc. Soc. Exper. Biol. & Med. **27**: 609, 1930.

12. Massengale, O. N., and Nussmeier, Mildred: J. Biol. Chem. **87**: 415 (June) 1930.

addition to the ration should not involve an increase in price. It might likewise be found of commercial advantage to add irradiated yeast to the concentrates which are sold as fodder for cows. It would seem unnecessary to add a supplement of this kind to the fodder during the summer months, the season when infants in the temperate zones are naturally protected from rickets by solar irradiation. Probably more than one method will be found applicable to the prevention of rickets, from the point of view of public health, and procedures that are suitable to the metropolis and large city may be unsuited to rural communities. Only practical experience can give information in this regard. Whatever its scope, it would seem that this "biologically activated milk" will be found a useful therapeutic agent in combating rickets, which in this country is the most common nutritional disorder of infants. It may be added that the administration of such milk to lactating mothers will, probably, augment the antirachitic potency of breast milk, which has been shown by Hess and Weinstock and others to be notably deficient in this factor.

SUMMARY

Cow's milk was rendered highly antirachitic by means of supplementing the fodder with irradiated ergosterol (viosterol) or with irradiated yeast.

These milks of various potencies were given to a large series of young infants during the winter. By this means rickets was prevented except in its minor manifestations; roentgenologic rickets did not develop. In cases in which rickets was already present, the milk brought about calcification within a month.

From the point of view of the number of antirachitic rat units fed to the cow, the irradiated yeast induced a more potent milk than the viosterol. This distinction was evident both by biologic assay on rats and by clinical tests of a preventive and curative nature.

The outstanding advantage of this method of antirachitic therapy is that it functions automatically; the specific factor is incorporated in the diet of the infant, relieving the physician of dependence on the cooperation of the mother.

ABSTRACT OF DISCUSSION

DR. JESSE R. GERSTLEY, Chicago: Whether the studies reported by the authors constitute the last step in the conquest of rickets, time only will tell. There is still the unsolved question as to possible injury in an overdose of these vitamins. German observers have repeatedly advised as to the danger of an overdose of their preparation similar to our viosterol. Again comes the question as to whether the method advocated by Dr. Hess is more feasible than that used by some dairies in attempting to develop methods of preserving the vitamin content of the fodder. It would be interesting to know why better results were obtained from irradiated yeast than from viosterol. Was this owing to variation in dosage, to practical questions in the administration of the vitamins, or is there still something in the yeast of which we are ignorant?

DR. H. J. GERSTENBERGER, Cleveland: As you know, we have been greatly interested in this phase of preventing rickets. In 1914 we incorporated cod liver oil in food mixtures with that specific purpose in mind. In 1929 in St. Louis I had occasion to report effective results with women; that is, we were able to make women's milk antirachitic by feeding irradiated ergosterol to the wetnurses. Last year in Stockholm we were able to report in detail fifteen cases fed different amounts from different wetnurses. This spring I had occasion to check milk that was produced in similar fashion at Wooster, Ohio. Dr. Krause and Dr. Betke reported at the Montreal meeting regarding the efficacy of such milk. Our method has not been the method of preventing rickets but the method of studying the antirachitic potency of the milk according to our scheme, which requires observation for three to four weeks and then giving to the patient the milk, watching the speed with which the rickets disappears. It is evident from the data Dr. Hess presented that rickets can be cured in this fashion. I will put it this way: Milk can be made antirachitic. I wonder whether this really is going to be a feasible scheme. I wonder because of the difficulty that I foresee, the practical difficulty of knowing the antirachitic potency of the milk so produced. The antirachitic value of cod liver oil and viosterol can be determined before it is given to the infant, but it takes three weeks to test the antirachitic value of the milk produced today. That is one side. The other side is that rachitic spasmophilia develops as a result of inadequate prevention of rickets and, if the amount of the antirachitic factor in the milk should be too low and the infant is growing normally, it is perfectly possible to get a good crop of what I call primary low calcium rickets, accompanied by spasmophilic symptoms. I think that for these two reasons it will be wise to postpone the institution of a general scheme such as this until a great deal of practical experience has been obtained.

DR. WILLIAM WESTON, Columbia, S. C.: During the past winter two groups of chickens were fed, one on irradiated milk and the other on milk that had cod liver oil added to it. The group on irradiated milk gained in weight and in growth just twice as much as the other group. One other thought that comes to my mind is the suggestion that we do not know the great number of ways by which rickets might be prevented by the use of various irradiated foods.

DR. HARRY LOWENBURG, Philadelphia: For a long time I have noticed that one frequently meets cases in which these antrachitic agents have been given from birth for several months and they exhibit all the earmarks of rickets. On the other hand, one sees patients who have never received these agents and they are perfect specimens clinically. The mere question of dosage being insufficient, the treatment cannot be applied universally to the children that develop rickets. It is certain to the inquisitive mind that something more than a consideration of vitamins is necessary in the production of rickets. It seems to me that there is a great danger at present in the advocacy of this or that vitamin and the neglect of other factors which are of equal importance. I have often wanted to write to Dr. Hess to ask him to explain to me why it is that physicians see these cases of marked rickets in children who have received antirachitic agents, and commonly do not meet rickets in children who never received cod liver oil. There is one other danger I want to stress, and that is this: Dr. Hess made the statement that this method of handling cows would provide a method beyond the mother's control. I think there is a danger in this. I think soon the dairies that are commercially inclined and the journals that are ready to receive their advertisements will be advertising irradiated milk and the mother will feel that all she has to do to prevent rickets is to buy this new kind of milk. I believe there is the danger that the public will seize this as the easiest way out.

DR. ALFRED F. HESS, New York: The question of overdosage really entered the literature owing to the fact that the first dosage of the German preparation was far too great. Since then it has been reduced and is now only about one fifteenth of what it was initially. I have reported cases of overdosage associated with hypercalcemia, but I must say that in the last two or three years I have seen no such cases. I do not believe that this method will bring in any danger of that sort. The first speaker referred to protecting the vitamin D content of the fodder of the cattle. There is no vitamin D content in the fodder of cattle. There is antiscorbutic, vitamin B and others, but no vitamin D content. It is difficult to discuss Dr. Gerstenberger's results because the amount of viosterol was given in milligrams, let us say 100 mg. Of course, that can mean a great deal from the standpoint of rat units; 100 mg. can mean twice as much of one irradiated ergosterol as of another. In most of the cases he gave skim milk, while the antirachitic potency resides in the cream; in other words, in the part that contains the fat. Therefore, if skim milk is given, one will have to give much more than if whole milk is given. But even so, I think, had he used irradiated yeast, he would have had better results, just as

I had. In regard to the question of spasmophilia, we had, as I said, two or three cases of rickets in spite of the small doses of irradiated yeast. But there were no cases of spasmophilia. So far as we have gone, this danger has not arisen. I think we should start with certified milk, as everybody has said. It should not be introduced at once or on a large scale, but if we start in the large cities with certified milk, I think that will be an excellent beginning. The question about vitamin D raised by the last speaker is, I think, a good one, about why the infants frequently are not protected in spite of getting what might be considered an adequate amount of these vitamins. I did not want to bring the matter up because I did not think I had enough time, but I am glad to discuss this point in a few words. I have for the last five years or more frequently brought up the question of whether this vitamin D is really a vitamin. In fact, some may have noticed that I have for years spoken of it as the antirachitic factor.

Second, and perhaps more important, is the fact that rickets is more apt to occur the more milk one gives. In other words, a baby that gets a pint of milk is not nearly so apt to get rickets as if he received a quart of milk, and that baby is not so apt to get rickets as a baby that receives a quart and a half. That hardly sounds like a deficiency disease. It is hard to believe that it is just a true deficiency disease. Quite the contrary is true of scurvy. If an infant is given a pint of milk that has a small antiscorbutic titer, the child will get scurvy. If given a quart, it will not; a quart and a half, and it certainly will not. There is a relationship between the amount one gives and the protection that is afforded. I shall not go into that further, but I do believe as a corollary of what I have just said that there is something that we still do not understand in regard to the etiology of rickets. There is some unknown factor that we have not yet fathomed.

AN ETIOLOGIC STUDY OF A SERIES OF OPTIC NEUROPATHIES *

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In 1923, one of us with Dunn [1] reported an etiologic study of a series of various optic neuropathies. The patients reported in the former article had presented themselves at the clinic for visual disturbances, with no knowledge of the basic condition. There were eighty-six patients in this group, with various types of optic neuropathies. Of these eighty-six patients, thirty-five showed primary optic atrophy, twenty-four atrophy of the papillomacular bundles, thirteen secondary atrophy, five optic neuritis, four choked disk and five retrobulbar neuritis. Of these various conditions, 40 per cent were due to central nervous system syphilis, 12.7 per cent to disease of the posterior sinuses, 11.6 per cent to brain tumor, 5.8 per cent to multiple sclerosis, 11.6 per cent to toxic amblyopia, 3.5 per cent to various conditions, and in 13.8 per cent the actual cause of the optic neuropathy could not be determined.

Since the publication of that paper, numerous reports have appeared dealing with various special types of optic neuropathies. The question under discussion is chiefly the relative relationship of posterior sinus disease and of multiple sclerosis in the causation of optic nerve lesions. In view of the numerous and widely different conditions that may produce optic nerve lesions and the difficulty in diagnosis, it appeared to us that a proper evaluation could best be reached through a statistical study of the question as a whole.

The patients presented in this series were either patients in other services of the Johns Hopkins Hospital, who were seen in consultation in the Wilmer Institute, or patients who were admitted direct to the Wilmer Institute for diagnosis and study on account of critical optic nerve lesions. Dispensary and ambulant patients are not included in this report. All the patients included, therefore, were sufficiently ill to warrant admission to the general wards of the hospital, or else their vision was in such a critical condition that they were admitted to the wards of the Wilmer Institute. This report, therefore, presents the question from the point of view of the internist and the neurologic surgeon, rather than from that of the ophthalmologist.

The patients here reported were given, in general, a complete diagnostic study, which included the following: (1) ophthalmologic consultation, consisting of external examination of the eyes, visual acuity, refraction, ophthalmoscopic examination and perimetric and slit lamp examinations; (2) medical examination, including the usual physical examination and laboratory procedures; (3) neurologic examination; (4) laryngologic examination, and (5) studies of the Wassermann reactions of the blood serum and of the spinal fluid of all patients. Most of the serologic studies reported were made with the usual technic. In the more recent patients the newer serologic methods reported by Eagle [2] were employed.

In the files of the Wilmer Institute from its opening in 1925 up to March 1, 1931, there are a total of 6,130 histories. These include consultations from other departments of the Johns Hopkins Hospital. Among these histories there are 201 cases of the various optic neuropathies—primary atrophy, secondary atrophy, retrobulbar neuritis, papillomacular bundle atrophy, papilledema, optic neuritis and choked disk.[3] Twenty-seven of these histories were discarded immediately, as there was some complicating ocular disease, such as glaucoma or retinitis pigmentosa, which confused the picture. There were thirty-six other cases discarded because the diagnostic study was incomplete, for one reason or another, and no opinion could be expressed as to the etiologic factor. There remained 138 case histories in which the diagnostic study had been either complete or sufficiently complete to leave no doubt as to the actual etiologic factor responsible for the optic nerve disease.

RESULTS

Table 1 gives the composite results of this study. Regarded from the point of view of the clinical ophthalmologist, there were forty-eight cases of primary optic atrophy, twelve cases of secondary optic atrophy, thirteen cases of retrobulbar neuritis, twenty-four cases of atrophy of the papillomacular bundle, eight cases of optic neuritis and thirty-two cases of choked disk.

As seen in this table of the primary atrophies, thirty-four were due either to intracranial tumor or to central nervous system syphilis, nine cases were secondary to

* From the Wilmer Ophthalmological Institute of the Johns Hopkins Hospital.

1. Woods, A. C., and Dunn, J. R.: Etiologic Study of a Series of Optic Neuropathies, J. A. M. A. **80**: 1113-1117 (April 21) 1923.

2. Eagle, Harry: An Explanation of the Mechanism of the Wassermann and Precipitation Tests for Syphilis, Bull. Johns Hopkins Hosp. **47**: 292 (Nov.) 1930.

3. Throughout the course of this paper the term "papilledema" is used to indicate an edema of the optic papilla, irrespective of whether it may be due to inflammation of the nerve or increased intracranial pressure. The term "optic neuritis" is used to designate cases of papilledema in which further study indicated that the papilledema was due to an actual inflammation of the optic nerve. The term "choked disk" is used in those cases in which study of the individual patient indicated that papilledema was due to increased intracranial pressure.

arteriosclerotic changes, and five were due to widely scattering conditions. There was no one condition especially responsible for the secondary atrophies. Slightly over half of the combined retrobulbar neuritis and papillomacular bundle group were due either to multiple sclerosis or to posterior sinus disease. There was no especial etiologic factor found in the optic neuritis group. The choked disk group was due, to an overwhelming extent, to intracranial pressure, either actual tumor or "pseudotumor."

The exact percentages of the various etiologic factors responsible for these different neuropathies are shown in table 1. Of the group as a whole, 27.7 per cent were due to demonstrated intracranial tumor; 5.1 per cent were due to pseudotumor; 16 per cent were due to central nervous system syphilis; 0.7 per cent were due to secondary syphilis; 10.9 per cent were due to arteriosclerosis (a syndrome not included in our first report); 8.1 per cent were due to posterior sinus disease; 6.5 per cent were due to multiple sclerosis; 2.9 per cent were evidently the result of focal infection; 4.4 per cent were due to toxic amblyopia; 1.5 per cent were due to Leber's disease; 1.5 per cent were associated with mental retardation, no other pathologic factor being found; 1.5 per cent were due to intracranial aneurysm, and 5.1 per cent were due to widely scattering conditions, while in 8.1 per cent the etiologic factor was not determined.

TABLE 1.—*Etiologic Factors in One Hundred and Thirty-Eight Optic Neuropathies*

	Increased Intracranial Pressure		Syphilis		Arteriosclerosis										
	Actual Tumor	Pseudotumor	Central Nervous System Syphilis	Secondary Syphilis	Embolus of Central Artery	Endarteritis of Nutrient Vessels	Posterior Sinus Disease	Multiple Sclerosis	Focal Infection	Toxic Amblyopia	Leber's Disease	Mental Retardation	Intracranial Aneurysm	Scattering	Undetermined
Primary atrophy	14	..	20	..	4	5	..	1	..	1	..	..	1	1	1
Secondary atrophy	1	..	1	..	1	1	1	..	..	1	..	1	..	3	2
Retrobulbar neuritis	2	..	..	..	..	..	5	1	1	..	..	..	..	..	4
Papillomacular bundle atrophy	..	..	1	..	1	2	3	7	..	3	2	1	..	1	3
Papilledema: Optic neuritis	..	..	..	1	..	..	2	..	3	..	..	..	..	1	1
Papilledema: Choked disk	21	7	..	..	..	1	..	..	..	1	..	..	1	1	..
Total	38	7	22	1	6	9	11	9	4	6	2	2	2	7	11
Percentage	27.7	5.1	16.0	0.7	4.3	6.6	8.1	6.5	2.9	4.4	1.5	1.5	1.5	5.1	8.1

An analysis of these individual groups is as follows:

Intracranial Tumor Group.—There were thirty-eight patients in whom the optic nerve lesions appeared to be clearly due to intracranial tumor. Table 2 shows the various types of tumors found on exploratory craniotomy.

There were fifteen hypophyseal tumors. Twelve of these gave a clear cut picture of primary optic atrophy, with either greatly reduced vision or actual blindness. Eleven of the patients with primary optic atrophy showed the characteristic bitemporal, upper temporal or temporal field defects, while the remaining patient, presenting a rather remarkable case of tumor of the hypophyseal duct, showed a complete left homonymous hemianopia, the tumor pressing on the right tract immediately posterior to the chiasm. One patient showed the remarkable picture of choked disk in the right eye, with a primary atrophy in the left eye. This was the only instance of papilledema observed in the pituitary tumor group, a percentage of incidence considerably lower than that shown by Henschen's figures. Two patients in this group gave a typical picture of retrobulbar neuritis, with normal fundi and the visual fields normal in outline for form and color, but with bilateral central and paracentral sectomas. In these patients the tumor was evidently in such a position that it attacked especially the papillomacular bundles. Only one patient in this group showed any involvement of the extra-ocular muscles. In this patient there was a partial paralysis of one sixth nerve, a lesion not uncommonly observed in hypophyseal tumors.

There were seven tumors involving the cerebral hemispheres. Six of these patients showed bilateral choked disk and one patient showed a primary optic atrophy. Of the patients showing choked disk, five had normal vision and visual fields, while in the remaining patient some secondary atrophy had taken place with consequent reduction of vision and restriction of visual fields. The patient with primary atrophy had a right parietal granuloma. The visual field showed a left homonymous hemianopia. It is interesting that only one of these cerebral tumors affected the underlying optic tracts. In none of these patients was there any associated paralysis of the extra-ocular muscles.

There were nine tumors either of the cerebellum or cerebellopontile angle. All these patients gave an ophthalmoscopic picture of high grade choked disk. In seven of these cases the vision and visual fields were entirely normal. In the remaining two cases, in which some secondary atrophy had taken place, there was some failure of vision and peripheral constriction of the visual fields. There was no paralysis of the extra-ocular muscles in any of these patients.

There were three tumors of the pineal body. One of these patients likewise had a spongioblastoma of the cerebellum. All had high degrees of choked disk. In one patient, vision was greatly reduced from secondary atrophy with associated visual field constriction. In the other two patients, both the vision and the visual fields were normal. It is of great interest that each of these patients with pineal body tumors had definite involvement of the extra-ocular muscles. In two patients there was paralysis of the ocular motor nerve, and in one patient paralysis of the abducens nerve.

The remaining four tumors are in no way remarkable. One was a solitary tumor of the third ventricle and one a glioma of the aqueduct. Both of these cases gave a picture of choked disk with no involvement of the vision, visual fields or extra-ocular muscles. Of the remaining two cases, one was secondary atrophy following choked disk, in which decompression had been done years before but the tumor had not been removed; the other was multiple cerebral and skull metastases from carcinoma primary in the breast.

Of especial interest are the seven cases of optic neuropathies secondary to pseudotumor. This condition has recently been the subject of a report[4] by Fra-

4. Frazier, C. H.: Cerebral Pseudotumors, Arch. Neurol. & Psychiat. 24: 1117-1132 (Dec.) 1930.

zier. All the cases in this group apparently correspond to the type described by him as pseudotumor and arachnitis. Our seven patients all gave a clinical picture of choked disk, and two showed some secondary atrophy with corresponding constriction of the fields. None of the patients in this group showed any associated paralysis of the extra-ocular muscles. In all these patients, ventriculography or exploratory craniotomy failed to reveal any actual tumor. The postoperative course was that of a typical arachnitis.

TABLE 2.—*Types of Tumors*

Type of Intracranial Tumor	Primary Atrophy	Secondary Atrophy	Papillomacular Bundle Atrophy	Retrobulbar Neuritis	Papilledema: Optic Neuritis	Papilledema: Choked Disk	Associated Ocular Motor Palsies	Visual Field Changes	Total
Hypophyseal tumor	12	0	0	2	0	1 (one eye)	1	15	15
Tumors of cerebral hemispheres	1	0	0	0	0	6	0	2	7
Cerebellar or cerebello-pontile angle tumors	0	0	0	0	0	9	0	2	9
Pineal body tumors	0	0	0	0	0	3	3	1	3
Scattering	1	1	..	..	..	2	..	2	4
Totals	14	1	0	2	0	21	4	22	38

Syphilis Group.—There were twenty-three patients in all in this group. One patient had secondary syphilis and showed an ordinary optic neuritis, such as is commonly observed in this condition. The extremely low incidence of secondary syphilis in optic neuritis in this series is undoubtedly due to the fact that these patients, as a rule, are treated in the dispensary and are not admitted to the wards. The other twenty-two patients had central nervous system syphilis. Of these patients, twenty showed a primary optic atrophy. The serologic studies in these patients illustrate the well known unreliability of a negative Wassermann reaction of the blood in optic atrophy in central nervous system syphilis. While eleven of these twenty patients had a positive Wassermann reaction of both the blood and the spinal fluid, seven had a negative Wassermann reaction of the blood with a strongly positive Wassermann reaction of the spinal fluid. In the remaining two cases in this primary atrophy group, both the blood and the spinal fluid were negative on serologic examination, but the history was positive in both instances, and the clinical pictures were clearly those of burnt-out tabes. There was one case of secondary atrophy in a patient with dementia paralytica, in which the blood and spinal fluid both showed positive Wassermann reaction. The remaining case was one of those rarely encountered cases of papillomacular bundle atrophy which was apparently the end-result of old basilar syphilitic meningitis, the inflammatory process presumably attacking the exposed tracts at the base of the brain and producing descending atrophy of the papillomacular bundle. In this patient, the Wassermann reactions of both the blood and the spinal fluid were positive.

Arteriosclerosis Group.—The rôle of vascular sclerotic changes in the production of optic atrophy is well known. Either sclerosis or endarteritis of the nutrient vessels of the optic nerve may produce an atrophy which, in its clinical appearance, may affect either the papillomacular bundle alone or the entire nerve, and may be either primary or secondary in type, depending on whether or not the associated retinal arteriosclerosis is complicated by papilledema. Secondly, embolus of the central artery ultimately results in an optic atrophy, usually primary in type, but sometimes secondary, associated with a papilledema due to coexistent retinal arteriosclerosis. Rarely, an embolus may produce a typical picture of papillomacular bundle atrophy, although in arteriosclerotic individuals such a picture is usually a senile descresence. There were fifteen cases in this series in which the optic nerve lesions appeared to be clearly due to sclerotic changes in the vessels. The distribution of these is not remarkable; the figures are shown in table 1.

Posterior Sinus and Multiple Sclerosis Group.—These groups are especially interesting in view of the long controversy which is still in progress on this question. The literature on the subject has recently been well summarized by Gifford,[5] who paid especial attention to the rôle of disease of the paranasal sinuses in the production of retrobulbar neuritis and papillomacular bundle atrophy. One group of observers, notably the Americans, including Bordley, Peter, Crowe, Stark, Crane and Fitzgerald, appear convinced of the great importance of posterior sinusitis in the production of optic nerve disease. Cushing takes a somewhat opposite point of view. A second group of observers, chiefly in Germany, Scheerer and Maier reporting a great number of cases from the Tübingen clinic, suspect multiple sclerosis as the most important factor in the causation of retrobulbar neuritis and its end condition—atrophy of the papillomacular bundles.

In this series there were five patients with acute retrobulbar neuritis, in none of whom was there any evidence of multiple sclerosis and in all of whom there was prompt and marked improvement of vision after radical drainage of the posterior ethmoidal and sphenoidal sinuses. It seems safe to attribute the retrobulbar neuritis in these patients to the posterior sinus disease. There were three other patients who showed a definite atrophy of the papillomacular bundle. In these patients a complete diagnostic survey was negative except for a manifest infection in the posterior ethmoids and sphenoids. Operation on these patients was without effect in improving the vision, as might be expected, for the atrophy of the nerve was already manifest. In these eight patients, therefore, the retrobulbar neuritis-papillomacular bundle atrophy syndrome may safely be attributed to the posterior sinus disease.

TABLE 3.—*Cases Presenting Retrobulbar Neuritis—Papillomacular Bundle Atrophy Syndrome*

Type of Neuropathy	Posterior Sinus Disease	Multiple Sclerosis	Central Nervous System Syphilis	Arteriosclerosis	Focal Infection	Leber's Disease	Intracranial Venous Thrombosis	Undetermined
Retrobulbar neuritis	5	1	0	0	1	0	0	4
Papillomacular bundle atrophy	3	7	1	3	0	2	1	3
Total	8	8	1	3	1	2	1	7

There were two cases of definite optic neuritis secondary to massive infection of the sphenoidal

5. Gifford, S. R.: The Relation of the Paranasal Sinuses to Ocular Disorders, Especially to Retrobulbar Neuritis, Arch. Ophth. 5: 277 (Feb.) 1931.

sinuses, the neuritis subsiding with the clearing up of the sinus condition, and one case of rapidly progressing secondary optic atrophy associated with general pansinusitis which, in spite of radical operation, progressed to total blindness.

There were eight patients in whom, at the time of study or in the later development of their clinical pictures, a diagnosis of multiple sclerosis was justified. Seven of these patients were in the advanced stage of atrophy of the papillomacular bundle, while one patient had an acute retrobulbar neuritis. In two of these eight patients there was some evidence of posterior sinus disease, but operation on the sinuses was without effect on the eye picture.

In the undetermined group in this series there are four cases of retrobulbar neuritis and three cases of papillomacular bundle atrophy. None of these patients showed any evidence of posterior sinus disease, although in two patients, owing to their acute condition and the uncertainty of the negative clinical diagnosis of posterior sinus infection, the posterior sphenoids and ethmoids were opened and drained, without effect on the optic nerve lesion. In these seven patients there was no evidence of multiple sclerosis other than the eye picture. It may well be that all seven of these patients had early multiple sclerosis. It does not appear justifiable to us, however, to make a diagnosis of multiple sclerosis on the eye picture alone, in the absence of other associated lesions. This is, however, a definitely mooted point, and were these seven cases classified as multiple sclerosis, as they might well be, the incidence of multiple sclerosis over that of posterior sinus disease would be almost two to one, rather than the present figures of equal incidence.

In this series there are a number of other cases of retrobulbar neuritis-papillomacular bundle atrophy syndrome which do not fall either under the posterior sinus disease or under the multiple sclerosis group. All cases of this syndrome are therefore given in table 3. These include eight cases due to posterior sinus disease, eight due to multiple sclerosis, one due to central nervous system syphilis, three due to arteriosclerosis, one due to focal infection, two due to Leber's disease, one due to intracranial venous thrombosis, and seven undetermined cases, which may or may not belong to the multiple sclerosis group. The importance of etiologic factors other than posterior sinus disease and multiple sclerosis in the production of this syndrome should be realized in the consideration of this subject.

Focal Infection.—The rôle of focal infection in the production of optic neuropathies is not clearly understood, and it is not within the scope of this report to go into such an academic discussion. There were, however, three cases of definite optic neuropathy in which complete diagnostic surveys were entirely negative except for infected tonsils. All these patients improved rapidly after removal of the tonsils. There was likewise one case of chronic retrobulbar neuritis in which infected tonsils were the only positive observation. Removal of these tonsils had little effect on this condition. The guess may be hazarded that in these patients the eye lesions were toxic in character from the infected tonsils.

Toxic Amblyopia.—There were six cases in this group. Three of these were clear cut cases of methyl alcohol poisoning. In one instance the clinical picture was a primary atrophy, in the second it was a picture of secondary atrophy, and in the last a papillomacular bundle atrophy. There was one patient with a typical tobacco amblyopia. As is usual in such cases, another contributory factor was present, in this case a glycosuria. There was one case of papillomacular bundle atrophy in a drug addict. This individual was so catholic in her tastes and favors that it seems unfair to attribute the condition to any one particular drug. The history and the absence of other etiologic factors, however, appeared to justify the diagnosis of toxic amblyopia. The remaining case was one of optic neuritis from carbon dioxide poisoning, in which the complete medical survey was negative. This was a private patient of Dr. Wilmer.

Miscellaneous.—The remaining cases in this series were due to a variety of conditions. There were two cases of Leber's disease with a clinical picture of papillomacular bundle atrophy. There were two cases of optic atrophy in mentally defective children. In one child the picture was that of papillomacular bundle atrophy and in the other generalized atrophy. Complete diagnostic studies were negative in both these children, and it seems fair to assume that the degenerative pictures of the optic nerves were similar to those in the gray matter of the cerebrum.

There were two remarkable cases of intracranial aneurysm. One patient showed a primary atrophy of one nerve, apparently due to aneurysm of the internal carotid artery, with adhesion of the nerve to the anterior clinoid process. The second was a papilledema and secondary atrophy due to aneurysm of communicating vessels of the circle of Willis. Both these conditions were revealed by operation.

The remaining cases were all isolated. One was papilledema secondary to intracranial hemorrhage. The second was optic neuritis secondary to metastatic carcinoma of the skull. The third was primary atrophy in a child, in which exploratory craniotomy showed dense fibrous tissue surrounding the optic nerve. The fourth was a case of secondary atrophy following epidemic encephalitis. The fifth was papilledema secondary to cerebellar abscess. The sixth was papillomacular bundle atrophy secondary to venous thrombosis involving the left optic tract. The last was in a patient presenting secondary atrophy which followed thrombosis of the central vein of the retina.

Undetermined.—There were eleven cases classed as undetermined. Seven of these have already been discussed as possible cases of multiple sclerosis. Of the others, one was probably due to syphilis, and another, a case of secondary atrophy, was probably due to an arrested hydrocephalus. The remaining two cases were secondary atrophy and active optic neuritis. Exhaustive diagnostic studies were entirely unproductive and, on discharge of these patients, we had no idea of the causative factors in their optic neuropathies.

COMMENT

As we have already noted, we believe that our first report, although it comprised a smaller number of cases, is a more accurate reflection of the relative importance of the various etiologic factors than are the figures of this report shown in table 1. The preponderance of optic neuropathies due to intracranial tumors in this series is a reflection of the large neurosurgical service of the Johns Hopkins Hospital, while the smaller number of cases due to syphilis is likewise a reflection of the fact that by far the greater number

of syphilitic patients are ambulant patients treated in the outpatient department and do not, as a rule, enter the wards of the hospital, except for some complicating condition. The figures in the retrobulbar neuritis-papillomacular bundle atrophy syndrome are probably a fairly accurate reflection of the actual conditions. The majority of these patients enter the hospital in either the laryngologic service or the ophthalmologic service for complete diagnostic study.

We would again emphasize a point that we brought up in our earlier paper—the need for more exact nomenclature in the various optic neuropathies. The nomenclature used in this discussion appears in the main adequate to cover the observed conditions and obviates the use of large numbers of confusing terms, which are commonly encountered.

SUMMARY

A series of 138 patients presenting optic neuropathies, most of whom were admitted to the wards of the Johns Hopkins Hospital in various services, is presented. Of these cases, 27.7 per cent were due to actual intracranial tumor; 5.1 per cent were due to pseudotumor; 17.7 per cent were due to syphilis; 10.9 per cent were due to arteriosclerosis; 8.1 per cent were due to posterior sinus disease; 6.5 per cent were due to multiple sclerosis; 2.9 per cent were due to focal infection; 4.4 per cent were due to toxic amblyopia; 9.1 per cent were due to miscellaneous conditions, while in 8.1 per cent the exact etiologic factors could not be determined.

HEMOCHROMATOSIS

TWO ATYPICAL CASES OCCURRING IN BROTHERS

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Though hemochromatosis is said to be a disease in which there is a bronzing of the skin and a definite diabetic condition as determined by the analysis of sugar in the urine, it is of interest to note that in the two cases here reported neither patient had the so-called bronzing and only one showed sugar in the urine, that sign appearing for the first time immediately prior to death. The physical signs were closely allied in both cases, allowing, of course, some time for the progress of the disease in the younger brother. The dominant symptoms were pain in the epigastrium, tenderness over the edge of the liver and a history of excessive drinking which usually occurred over a week-end. Mallory's experimental observations, showing copper poisoning and the excessive use of improperly distilled liquors as probable causative factors of hemochromatosis, were demonstrated in these two cases. The fraternal relationship of the patients afforded another interesting phase in these cases.

REPORT OF CASES

CASE 1.—A man, aged 43, an American, a buyer, was seized with cramplike pain in the epigastrium and collapsed while at dinner in Concord, Mass., Oct. 16, 1927. A local physician was called and administered a hypodermic injection of morphine. The patient recovered sufficiently to return to Boston that night.

The patient was first seen by one of us (L. F. C.), Oct. 19, 1927. At that time he complained of pain and weight over the region of the gallbladder. He belched a great deal of gas and stated that his appetite had increased of late. He had not vomited but the pain remained constant. The distressed feeling had increased and he could lie down only with difficulty. He neither drank much water nor voided a great deal. He had been in bed for the past three days on a milk diet and had had sedatives for his pain.

The general health had been fairly good, but the patient had always been thin and had a sallow color. He suffered from occasional colds and eructations of gas. He smoked much, chiefly cigarets, and since the advent of prohibition had frequently indulged in liquor over the week-ends. He always purchased from bootleggers what he thought was good liquor. He had worked steadily but for the past few weeks had felt fatigued. His business worries were attributed as the cause of his overwork and fatigue.

Laboratory observations before the patient's admission to the hospital showed: white blood cells, 7,000; red blood cells, 4,320,000; a negative Wassermann reaction; blood sugar, 106 mg., and acid urine without albumin, sugar, acetone or diacetic acid. The specific gravity of the urine was 1.018.

Physical examination gave essentially negative results except for the abdomen, where the edge of the liver was felt firm and smooth about on the level with the umbilicus. There was no tenderness or discomfort on pressure. Over the region of the gallbladder there was a definite spasm and marked tenderness on palpation. Percussion yielded a dull note in this region over an area about the size of a tangerine. The spleen was easily felt about two fingerbreadths below the costal margin. Both lower quadrants were normal, and there was no evidence of ascites or shifting dulness.

The skin showed evidence of a marked tanning all over the body, the strap mark of a bathing suit being easily discerned except over the genital area, where the bathing trunks had afforded protection. In that region the skin had a peculiar grayish hue.

Two days after admission, examination of the blood showed: hemoglobin, 60 per cent; coagulation time, five minutes. The white blood cells had increased to 11,800 and the red blood cells to 4,900,000. The differential count showed: small lymphocytes, 18 per cent; large lymphocytes, 8 per cent; polymorphonuclears, 73 per cent and eosinophils, 1 per cent.

Roentgen examination of the gallbladder region showed a marked enlargement of the liver. In addition to this, an oval shadow could be made out below the edge of the liver, which suggested the shadow cast by a pathologic gallbladder. After the administration of the dye, no filling was obtained, so that this was also evidence pointing toward a pathologic condition of the gallbladder. High in the region of the cystic duct there was an irregular dense shadow which was suggestive of the shadow cast by a stone, but it was not definite enough to permit an absolutely positive diagnosis. The picture as a whole indicated the presence of a large gallbladder in a pathologic condition.

Although the patient had been under observation one week, pain, tenderness, and spasm of the abdomen had increased Vomiting had been present during the preceding twelve hours The temperature remained normal and the skin was unchanged in color. The patient appeared acutely ill. The abdomen presented boardlike rigidity. The stools showed no occult blood. Because of vomiting, increased abdominal signs and suggestive roentgen observations, exploratory laparotomy was deemed advisable.

November 6, operation was performed under gas-oxygen-ether anesthesia. The skin was prepared with ether, iodine and alcohol. A right rectus incision 5 inches long was made through the skin, the fascia and the peritoneum, and the abdomen was opened. The stomach and the duodenum were normal and no enlarged mesenteric glands were seen. A large cirrhosis of the liver was found extending from the midcostal margin to the umbilicus. There was no fat necrosis present. The gallbladder was enlarged to the size of a pear, it was under tension and moderately inflamed. A small constricting band of adhesions at the lower end prevented normal emptying. No stones were palpable. The cystic and common ducts contained no stones. The adhesions were severed. The gallbladder was freed, clamped and removed; the stump was cauterized, and fixed with stay suture. The pancreas was slightly enlarged, and hard on palpation. A cigaret drain was inserted. The abdomen was closed in layers except at the site of drainage. Gallbladder

disease did not appear to be this patient's entire difficulty; hemochromatosis was considered a possibility. A small square of superficial skin was removed from the external surface of the right ankle for diagnosis. The patient returned to his room in good condition.

The pathologic report of the microscopic examination of a section of skin stained for demonstration of hemofuscin and hemosiderin showed that both were well marked about the coil glands, blood vessels in the fibroblasts and fat cells. The gallbladder was normal. Dr. F. B. Mallory, who examined this specimen, felt that this strongly suggested hemochromatosis.

A specimen of freshly voided urine showed occasional necrotic epithelial cells, containing numerous granules of yellow pigment, which gave the prussian blue reaction with ferrocyanide of potassium.

Two days postoperatively the patient was retaining quantities of fluid and, although he was nauseated, there was no vomiting. The skin took on a suggestive jaundice tinge. The blood sugar rose to 117 mg. and sugar was found in the urine for the first time. No acetone or diacetic acid was present.

The patient continued to have a fairly good convalescence with only slight distention and a slight amount of serous drainage from the wound. On the sixth day after operation, the temperature rose to 102 F. with a pulse rate of 130 per minute. The patient was coughing a greenish sputum and presented some fine crepitant râles in the right side of the back. The skin showed a moderate jaundice throughout. The blood sugar was increased to 122 mg. and sugar (0.3 per cent) was found in the urine. Acetone and diacetic acid were still absent.

Two days later the patient became restless and irrational; the pulse was weak and thready but responded to stimulation. The cough still persisted and the chest contained râles scattered throughout the right side of the back with an area of consolidation the size of the palm of the hand. The skin showed a deep jaundice. The patient refused nourishment and the blood sugar was elevated to 125 mg.

On the ninth day after operation, the patient gradually grew worse throughout the night and became irrational and restless. The pulse rate rose to 148 and the beat was thready and intermittent. The patient gradually sank into coma and died at 12:20 p. m. Autopsy was not permissible.

CASE 2.—About fifteen months later, April 3, 1929, the elder brother, who was 48, single and a clerical worker, was admitted to the hospital. He had been seized with a dull ache in the epigastrium one week previously, the pain being constant but not aggravated during the ingestion of food or after eating. The pain remained localized and was severe for two days but had abated considerably at the time of presentation. The patient had drunk bootleg liquor for two days prior to the onset of the pain.

Physical examination gave negative results except that the edge of the liver was felt about three fingerbreadths below the costal margin. Roentgenograms of the gastro-intestinal region, urinalysis, blood smear, and analysis of the blood sugars gave negative results. Because of similar symptoms in the younger brother and because of the palpable liver and the alcoholic history, a section of skin was examined for diagnosis. The patient was discharged one week after entrance to the hospital. The general symptoms had disappeared and the skin wound was granulating.

Pathologic examination of the section of skin was reported by Dr. Mallory to show hemosiderin in the vicinity of the coil glands and in the fat tissue. Dr. Mallory also considered this picture consistent with hemochromatosis.

The patient was next seen, Feb. 10, 1931, and stated that he had been feeling fine and had had no further distress. His color was good and his general appearance indicated good health. He had stopped drinking since admission to the hospital two years previously. His blood pressure was 150 systolic and 90 diastolic. The urine showed no albumin or sugar and the liver was slightly enlarged but not tender. He refused another biopsy of the skin.

COMMENT

The condition was first reported by Troussear and later by Troisier,[1] in 1871, and by Hanot and Chauffard,[2] in 1882. Von Recklinghausen,[3] in 1889, was the first to observe the pathologic changes of hemochromatosis and attributed the causative factor to primary destruction of the red cells, as he found two yellow pigments in the lesions: hemosiderin, which gives iron reactions, and hemofuscin, which does not react to iron. He believed that the deposited hemofuscin was derived from hemoglobin.

Numerous hypotheses have been offered as to the causation of hemochromatosis. The pathogenesis has been considered as (1) secondary to diabetes on account of the destruction of pancreatic tissue; (2) following cirrhosis, because of excessive use of alcohol; (3) caused by an unknown toxin,[4] which responds to hemosiderin, the deposits secondarily producing sclerosis of the liver and pancreas, or (4) metabolic, the pigment being due to perverted iron, and the cells of the various organs retaining the iron through circulation. Gaskell and others [5] in this study discovered an increase of iron in the blood and attributed the hemochromatosis to faulty elimination.

Mallory,[6] in attempting to arrive at the etiology, made a clinical study of necropsies at the Boston City Hospital from 1897 to 1923. He divides the patients into three groups: (1) those who indulged in alcohol in excess for many years; (2) those who worked at occupations involving exposure to copper, and (3) those whose histories gave no probable cause. Mallory's studies presented two factors as causative agents of hemochromatosis: excessive indulgence in alcohol and exposure to copper.

Experimental studies were then undertaken by Mallory and his co-workers.[7] Copper acetate in various amounts was added to the food of rabbits and monkeys. Pigmentary cirrhosis of the liver identical with cirrhosis found in human hemochromatosis resulted.

In an analysis of sixteen cases, three of which were in women, Mills [8] expressed the opinion that an excessive use of alcohol in a patient's history was of significance because the distilled liquor frequently contained copper in varying amounts. The source of the copper in distilled liquor probably lay in the action of volatile acids, especially acetic acid, passing over with the alcohol and acting on the copper coils of the distilling apparatus.

In Mallory's series, analysis of eight distilled liquors all of the "bootleg" type showed deposits varying from a trace to 185 mg. of copper to a liter. Hess [9] found 2 mg. of copper per liter in pasteurized milk running over copper pipes, and he showed how this amount might produce scurvy by the interference in the action of vitamin C.

1. Troisier: Sur un cas de diabète bronzé, Bull. et mém. Soc. méd. d. hôp. de Paris **14**: 203, 1897.

2. Hanot, V., and Chauffard, A.: Cirrhose hypertrophique pigmentaire dans le diabète sucré, Rev. de méd., Paris **2**: 385, 1882.

3. von Recklinghausen, in Tice: Practice of Medicine.

4. Marie, P.: Sur un cas de diabète bronzé suivi d'autopsie, Semaine méd. **15**: 229, 1895.

5. Gaskell, J. F.; Wallis, R. L. M., and others: A Contribution to the Study of Bronzed Diabetes, Quart. J. Med. Oxford **7**: 129, 1914. Howard, C. P., and Stevens, F. A.: The Iron Metabolism of Hemochromatosis, Arch. Int. Med. **20**: 896 (Dec.) 1917. McClure, C. W.: Metabolism in a Case of Hemochromatosis, ibid. **22**: 610 (Nov.) 1918. Muir, R., and Dunn, J. S.: The Iron Content of the Organs in Bronzed Diabetes (Hemochromatosis), J. Path. & Bact. **19**: 226, 1914.

6. Mallory, F. B.: Hemochromatosis and Chronic Poisoning with Copper, Arch. Int. Med. **37**: 336 (March) 1926.

7. Mallory, F. B.; Parker, Frederic, Jr., and Nye, R. N.: Experimental Pigment Cirrhosis Due to Copper and Its Relation to Hemochromatosis, J. M. Research **42**: 461 (Oct.-Dec.) 1921.

8. Mills, E. S.: Hemochromatosis with Special Reference to Its Frequency and to Its Occurrence in Women, Arch. Int. Med. **34**: 292 (Sept.) 1924.

9. Hess, A. F., and Weinstock, Mildred: Catalytic Action of Minute Amounts of Copper in Destruction of Antiscorbutic Vitamin in Milk, J. A. M. A. **82**: 952 (March 22) 1924.

Males appear to be more often affected, probably on account of excessive use and also exposure by occupation. The condition has, however, been demonstrated in the earlier stages in the livers of women in association with an alcoholic cirrhosis. Thirst, indigestion, vague distress over the liver or the gallbladder region, voracious appetites, polyuria and pruritus, fatigue and slight loss of weight appear to be the general symptoms.

The urine has a high specific gravity, contains sugar and diacetic acid increased in amount, and assimilates a diabetic urine. Freshly voided urine may present hemosiderin crystals, which are found in the orange or brown granules of the epithelial cells or casts of the centrifugated sediment after staining.

Primary liver cell carcinoma appeared to be a sequela of this condition. Its attributing factor is probably the continued necrosis and regeneration of liver cells. In cases in which the liver is unusually large, the possible incidence of a malignant process should be considered.

SUMMARY

The histories of both patients began with acute abdominal pain situated in the epigastrium, which followed shortly after drinking "bootleg" liquor. The pain was constant and had no relation to food. In the first case, vomiting was not present until nearly three weeks after onset of the disease.

In both patients, physical examination showed palpable livers. The skin appeared dry, and jaundice, although present in the younger brother, did not appear until six days after operation.

Bronzing of the skin was not present in either case.

In both patients, blood smears showed normal conditions with the exception of the white cell count, which was only slightly elevated.

In the first case, urinalysis showed sugar present for the first time two days after operation, while in the second case, sugar was never present. Following operation the blood sugar consistently rose while urinalysis gave varying figures for sugar and for the specific gravity.

Clinically, immediately prior to operation the first case assimilated an early ruptured gastric ulcer. The dye used in gallbladder visualization may have disturbed this patient's intestinal tract, but it was not sufficient to produce any obstruction of an acute nature. This metabolic upset was due to operative procedure.

The cirrhotic liver, alcoholic history and indulgence, plus positive urinary observations and biopsy of the skin, confirm the diagnosis of hemochromatosis.

CONCLUSIONS

Terminal signs of bronzing of the skin and sugar in the urine are not essential to a diagnosis of hemochromatosis.

Epigastric pain, tenderness of the liver, with or without enlargement, and excessive use of alcohol are sufficient as signs to warrant a biopsy of the skin.

The excessive use of distilled "bootleg" liquor with excessive copper content can produce hemochromatosis.

Although the patients were brothers, the causative factor in these cases appears to be the use of improperly distilled liquor, rather than an element of hereditary origin.

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PULMONARY TUBERCULOSIS

HOME TREATMENT VERSUS INSTITUTIONAL TREATMENT *

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In this paper I do not present a plea for any particular sanatorium, health resort, climate, altitude or what not. My text is as follows: The patient with pulmonary tuberculosis is best cared for in an institution especially conducted for the treatment of this disease (whether it is a completely equipped private sanatorium, a nursing cottage or a state, county or municipal tuberculosis hospital) and, in the majority of instances, at an appreciable distance from his home.

In the past decade home treatment has been much extolled. This is due to several factors. A feeling has steadily grown that climate counts for nothing, and the establishment of municipal, county and state sanatoriums all over the country during the past two decades naturally has fostered the idea that, as these institutions have reported uniformly good results, the patient probably could do just as well by carrying out the cure in his own home. This attitude shows that the prime object of the institution, namely, the education of the patient, has been overlooked. Dr. John B. Hawes II of Boston, in his book "Talks on Tuberculosis" says:

> What home treatment should be, and what it generally is, are unfortunately two very different things. . . . I feel very strongly that the number of patients with active tuberculosis in the incipient and favorable stages who should be treated at home rather than at a sanatorium is an extremely small one.

Dr. Gerald B. Webb of Colorado Springs, in his rewriting of the pamphlet "What You Should Know About Tuberculosis," published by the National Tuberculosis Association, says:

> The best advice for any patient in whom the diagnosis of tuberculosis has been made is that he seek admission to the nearest sanatorium. Here he will be educated in necessary knowledge and profit by learning the mistakes which other patients have made. In a sanatorium rest is found for the mind, as well as the body, there are no responsibilities, and daily life is all planned by others. In addition a sympathetic understanding is found. There are few who cannot adapt themselves to sanatorium routine, and the majority will regret that they cannot stay in such an institution until their cure is complete.

In a few cases home treatment will work; in the majority of cases it will not.

Taking the cure is like one of the definitions of Christianity, "a way of life," and a way of life that is particularly hard for the patient to follow at home. Time and again a patient has said to me: "Doctor, why must I remain at the sanatorium? It seems to me that there is nothing to the cure but staying in bed and I can do that just as well at home as here and do it more comfortably in the midst of my own belongings and with my family to wait on me." It is very natural that such logic should appeal to the patient, for the wish is father to the thought. Of course, if he has a good home he can be more comfortable there than in any sanatorium in the land, just as one is more comfortable in one's home than in the most luxurious hotel. But that is not the point! The cure does consist of more

* Read before the Section on Practice of Medicine at the Eighty-Second Annual Session of the American Medical Association, Philadelphia, June 12, 1931.

than merely lying in bed. There are, in addition to bed rest, the various details one learns from physicians, nurses, other patients, the force of example and the common routine. The necessary readjustment on the part of the patient to the inactivity necessitated by a long illness, the basis of the management of which is rest, can be brought about most easily when all round about are trekking along the same trail. The majority of patients are tremendously upset at the diagnosis of tuberculosis and need a period of quiet and of relative isolation in order to attune themselves to changed conditions. The diagnosis of tuberculosis affords the best example of the words of Tennyson in The Passing of Arthur: "The old order changeth, yielding place to new."

In an institution, whether private, state, county or municipal, the entire regimen is planned so as to make it most easy for the patient to do the right thing. He must deliberately step out of line in order to do the wrong thing and, as a result, far less individual supervision is required than is the case when the patient is in his own home. In the sanatorium the patient is one of a group of sick people striving toward the same goal. At home the patient is alone amidst well people and is forced to swim against the tide, for it is quite extraordinary how little relatives and friends, devoted though they may be, realize the limitations that must be placed on the tuberculous patient, much less the length of time those limitations must be enforced.

In the treatment of tuberculosis the main reliance is placed on rest and relaxation. By rest is meant bodily quiet. By relaxation is meant freedom from mental strain of any sort. The patient taking the cure at home may obtain the bodily quiet but is subject to three sources of irritation and disturbance; namely, those of (1) family, (2) friends and (3) business.

Family irritation is no rare thing in health. In disease it is more than ever apt to be present. Wives, mothers, fathers, sisters and brothers may, in one instance, be bulwarks of helpfulness and, in another, unmitigated nuisances. The overnervous wife and the overanxious mother appear on the scene in almost every type of medical practice. Fortunately, a large proportion of human ills are of relatively short duration and the patient can "get by" in some way. When, however, the deleterious influences already mentioned exert themselves over a period of many months, they become factors of major importance. Children, too, especially young children, are very trying. They are not to be blamed, poor little souls, but their screams, their chatter and their pounding feet on the stairs render the patient's nervous system taut and, in the end, bid fair to unstring it. It should moreover be borne in mind that the constant exposure of small children to an open tuberculous case is fraught with grave danger and that it is an impossibility to carry out every precautionary measure, because the child necessarily cannot be a party thereto; and partly through the child's ignorance and innocence and partly because of parental love and the desire for expressed affection, contacts leading to repeated chances of infection are well nigh inevitable. Furthermore, the patient is bound to know all the minor ailments, accidents and frictions that occur in the best regulated families. If the baby has colic, the patient has a sleepless night. If the 8 year old boy falls from his bicycle and cuts his head, all thought of rest is abandoned for some hours. If the plumbing gets out of gear, everybody is on edge until it is fixed—and so it goes. If this paragraph would seem to deal with those in comparatively affluent circumstances, how much more weight is there in the argument when dealing with those living in more cramped quarters with the inevitably closer association on the part of the different members of the family.

The matter of kind friends who come to visit also assumes serious proportions. It is common medical knowledge that in the home the control of visitors, irrespective of the ailment from which the patient is suffering, is an almost impossible task. In the institution, visiting hours, the propinquity of relatively few friends and the authority of a nurse can usually control this feature, while in the home it is vastly different. The nurse, if there is one, which is possible in but a small percentage of cases, is off duty for some hours, usually during the afternoon when callers are most apt to come; the family hesitates to cut short a visit for fear of giving offense to the visitor or the patient. On a given afternoon, four or five people call and at the end the patient is fretful, worn out, frequently with a heightened temperature, and anything but relaxed. Of course, these things should not be, but they are, and we all know that the case has not been overstated. It is remarkable how visitors love to retail to the patient all the disturbing news and gossip of the neighborhood; how they will make the invalid the recipient of their own troubles and regale him, or her, with all manner of disquieting news; and how long they will stay! Furthermore, it is universally known how much unsolicited advice is given by eager friends—advice as to duration of bed rest, as to food, as to diversions and as to activities after the patient is no longer at complete bed rest. They are sure that this or that will do him good; that the doctor did not mean him to be so exact in all that he does; that the doctor probably does not realize the particular circumstances; that the doctor does not know much about it anyway. The additional ten minutes' walking could hurt no one! A movie once a week would be just the thing! And surely an hour's motoring over smooth roads on such a wonderful day would bring color to his cheeks! Yes, the flush of a temperature of 100.5. But friends do not think of that.

Business associates are also a disturbing element in the life of the individual who is taking treatment at home, whether they are are bank presidents or the bookkeeper who has the adjoining desk. The office is usually accessible—certainly by phone—and matters come up which will take "only a minute" to talk over. It is not considered that the minute of talk may be the beginning of hours of disquiet and worry. Visits from business associates dropping in on Saturday afternoon or during the week on the way home from the office are also bad. The talk is invariably of "shop"; matters are discussed that leave the sick man unsettled in his mind and rebellious at the fact that he cannot take an active part in his affairs.

The foregoing paragraphs might appear to apply in the main to men patients. They apply quite as much to women patients, particularly the discussions as to family and friends. A transposition of pronouns is all that is necessary to make the cases identical. Furthermore, with mothers taking the treatment at home, the proximity of the children and the cares incident to their daily routine practically preclude any real mental relaxation.

The arguments submitted (with the exception of the one on the family) do not apply as soundly to patients acutely ill, with moderate or high fever and feeling very bad. These patients are too sick to enjoy visitors,

and the family can be restrained to a certain extent. In those who are improving, however, there comes that period in their cure when they can have some privileges, when association with their fellows in a restricted degree is beneficial, and when carefully graduated exercise is an integral portion of their treatment. At this time there is usually a coincident sense of well being and a great desire to do more than is actually prescribed. It is then that the influences referred to can be particularly baneful.

The majority of patients will do best taking the treatment in an institution at an appreciable distance, arbitrarily, 200 miles, from home. The advantage herein lies in the fact that family and friends cannot run up every Sunday, thereby keeping up a close connection with everything that is going on at home; that the telephone is used with more caution because of the expense; and the accident of geography enables the patient to concentrate more intently on the business of getting well. There is a group, numbering probably 10 or 15 per cent, who will not be contented in any institution but must have their own private quarters, whether they remain at home or seek treatment elsewhere. These individuals are, in the main, the wealthy or those of moderate means who are by temperament finicky, who cannot abide institutional regimen and who have a deep-rooted prejudice against association with others suffering from the same disease, or who belong to that benighted group who look on tuberculosis as a disgrace rather than as a misfortune, and who cannot bear to have their names associated with residence in an institution that carries with it the stigma of "unclean" to their oversensitive natures. Having one's private house away from home, however, is preferable to taking the treatment in one's permanent home. As a rule, the family attendance is curtailed, there being not more than one or two members with the patient; friends are few, generally newly made, and can more easily be controlled, and business and social cares are far away.

There is another factor which, I believe, plays a part. All of us like to get our money's worth. A patient leaving home for treatment is filled with a purpose. Wherever he may go, he goes not "for the ride" but because he believes that his chances of recovery are greater there than at home. Consequently he faces the situation with an enthusiasm, an anticipation and a hope that he cannot possibly have if he simply goes to bed amid the familiar surroundings of years, confronted with the overpowering contrast between his present and his former state.

"Yet I doubt not through the ages one increasing purpose runs" and this purpose on the part of the patient must be the determination to get well. If, as I have said, the cure of tuberculosis is a way of life, then the patient must be shown the way. That is all that we physicians can do. We can mark the highway, warn against side roads, steer clear of impassable byways; but we cannot carry the patient one yard, save in those cases in which lung surgery can be employed, whether in the form of artificial pneumothorax, phrenicectomy or thoracoplasty. In this relatively small proportion of cases, certainly not over 15 per cent of the total number, we physicians can, as it were, take an air line with the patient and by our own direct intervention not only reduce his period of treatment but change a dubious prognosis into a most excellent result. In all other cases the patient must tread the road himself and walk on his own legs. The family and friends may be great aids at times, but they are always sticks on which to lean—sticks which will keep the patient from acquiring the strength and self-confidence he needs, because of the very help that is at hand; a help not always wise in its devotion and sympathy. Given a change of scene, a change of lodging, a change of environment—in short, a new deal—the patient goes at the task ahead of him with a zest he is apt to lack in the too familiar confines of his home.

I do not mean to advocate always sending a patient away from home immediately subsequent to the diagnosis of tuberculosis. Patients with tuberculous bronchopneumonia and patients who have had hemoptyses with subsequent areas of softening, accompanied by high fever and evidences of acute illness, are much better kept at home until the initial acuteness of the condition has subsided and they can be moved with relative safety. On the other hand, I have seen patients literally railroaded out of their homes without being given time to take in the situation or to adjust themselves to what appears to be a cataclysmic upheaval in their lives. Some of these patients have been so unstrung by summary transportation that they have insisted on returning home within a few days, and only after the lapse of some weeks have they seen the wisdom of the decision that had been ruthlessly made for them and have willingly consented to leave home again. Such railroading of patients is unwise and often results in a psychic insult that may have far-reaching consequences in the highly geared individual.

At home, if something goes wrong with the patient, there is immediate evidence of uneasiness and alarm on the part of the household, a spirit not conducive to confidence and calm in the sickroom. In the institution, light is made of the situation, proper care is at once instituted, and the whole thing is treated as a matter of course. The family is kept informed of the situation but is not summoned unless really critical conditions supervene. I have particularly in mind the occurrence of small hemoptyses—in the home, always the occasion for grave alarm; in the institution, looked on with concern but not with terror. The very association with other patients has brought about the realization of the fact that the expectoration of a couple of teaspoonfuls of blood is, as a rule, merely an episode with no serious sequelae. At home, on the other hand, the word is passed around that "John has had another hemorrhage" and developments are awaited with bated breath.

The esprit de corps of the institution is a factor that cannot be counted on in the home. It is a form of mass psychology as compared with individual psychology and has its repercussion on every component unit of the mass. Character building and an attitude of quiet determination coupled with a modicum of unrebellious acceptance of the inevitable, essential for the successful pursuit of the cure, come to the majority far more easily in the institution than in the home, fostered as they are by the enormous influence of example.

It is obvious that I feel that the great benefits to be obtained from leaving home and preferably from institutional treatment are as much psychic as physical; but in the case of tuberculosis the psychic and the physical are so intimately blended that it is next to impossible to evaluate one above the other.

I close, therefore, as I began, with the thesis that the tuberculous patient is best cared for in an institution especially conducted for the treatment of tuberculosis and preferably at an appreciable distance from home.

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ABSTRACT OF DISCUSSION

DR. JAMES ALEXANDER MILLER, New York: Until science may discover a specific cure for this disease, the regimen that Dr. Ringer characterizes as "the way of life" and which is popularly termed "taking the cure" is the backbone of successful treatment. How successful this may be is witnessed by the testimony of thousands returned to active, useful life, whose experiences have taken tuberculosis out of the class of the hopeless diseases. Readjustment of our ideas concerning the importance of climate has led to considerable misapprehension of what is termed home treatment. It is now known that the proper regulation of rest and exercise, by which each patient gradually learns his own individual limitations, is the most essential element in the system of cure. This knowledge does not come naturally but by long, persistent effort, as with any other form of education. Schools are more effective instruments of education than home study or correspondence courses. A sanatorium or health resort is a school for health. The patient learns unconsciously from the example and experience of his associates. He need not learn entirely from his own mistakes, which are often costly. Gradually the knowledge of his limitations leads him to a habit of life which is instinctive and consequently no longer irksome. This not only assures the arrest of his disease but also insures him against the all too frequent relapses that may attend the return to active life. Another important factor is the skilled guidance of trained physicians which the sanatoriums and health resorts afford. These are the important teachers in the school for health. Patience and persistence in the care of chronic disease are not the gifts of every physician. Knowledge of technic, carefulness in detail, interest in small personal problems, thoughtfulness of varying temperaments, capacity for inspirational guidance through the difficult periods of the long treatment—these personal characteristics as well as the professional skill acquired by long experience in a special field are the assets that the sanatorium physician can and does bring to his patients. Through such an experience under such guidance the successful patient acquires not only a habit but a philosophy of life which enriches his whole existence and brings to it a beauty and fulness which the unscathed rarely or never acquire. It is a rare occurrence for a patient to achieve a permanently successful cure without at some stage going through this sanatorium or health resort experience. More than this, I could wish that every physician might have some such experience, not with personal illness but with some training in such a medical center. It would not only help to perfect skill in diagnosis and treatment of tuberculosis but would do much to strengthen the foundation and widen the horizon of general medical practice.

DR. A. M. FORSTER, Colorado Springs, Colo.: I was interested in what Dr. Ringer said about the difficulties of home treatment as compared in men and in women. I use an illustration in talking to the woman who wants to go back to her children. I tell her that if we took her husband and put him in his office on a cot and told him that all he needed was rest, and that he need pay no attention to the bookkeeper or to the customers or to his partners or to the telephone, and would simply get himself into the proper psychologic state and would rest, then that situation would be comparable to what the woman has to submit to when she attempts to take a rest cure in her own home. Dr. Ringer in his differentiation of rest spoke of physical and then of mental rest. An associate of mine has recently completed a study of 100 cases of tuberculosis, from a psychologic point of view, and I was struck by the vital importance of emotional as well as of mental rest. I think that we should divide that part of rest under those two classifications, and I think that Dr. Miller touched on that, as well as Dr. Ringer, in speaking of the spirit that invades the proper institution, because in our study we found that our patients all suffered first from the tremendous emotional shock of learning of the disease, and, secondly, the emotional shock of being compelled, without accord on their part, to separate themselves from the type of life which they had chosen; and I think that it is there that not only the sanatorium physician but also the good patient who comes in contact with the newcomer does a tremendous lot to help the sanatorium in the work that it has to do for the patient. I always feel in my own work that, in the 10 or 20 per cent, or whatever it happens to be in my own case, in which sanatorium treatment fails, the fault has been my inability to help the patient to adapt himself emotionally to his new situation.

DR. JAMES M. ANDERS, Philadelphia: In view of what has been stated by previous speakers regarding the part played by climate in the treatment of tuberculosis, it is well to remember that the sanatorium management of this disease grew out of its open air treatment. It may be said that satisfactory results have been obtained from the home treatment of tuberculosis. It is quite true, however, as pointed out by Dr. Ringer, that it is difficult to overcome the disturbing and even injurious effects, on the patient, of family and friends as well as of business and social interests in carrying out home treatment. Having experienced difficulty of this character, I feel that treatment some distance from home in a sanatorium is more nearly ideal, although to remove the patient a long distance from his home has certain disadvantages. The factors entering into the management of an active, early stage of tuberculosis are rather numerous. For example, fresh air, rest, proper feeding and sunshine are only the principal ones, there being other details that must be, as Dr. Ringer has intimated, learned from the physician in charge, from the nurses and from other patients. I feel that the force of example as an aid to the patient has been underestimated. In general, a stay of from nine months to a year is required to teach the patient the institutional regimen. This he cannot learn at home unless he is under the care of a tuberculosis specialist. The thorough relaxation, with a view to removing all mental strain, to which Dr. Ringer referred, is of the highest importance and can be best secured in a sanatorium some distance from home. After the patient has thoroughly familiarized himself with the institutional regimen he can, if he possesses average intelligence, usually thereafter be treated successfully at home and the danger of relapse is not any greater than among those discharged from institutions. Unfortunately, not all sanatoriums are efficiently conducted; hence institutional treatment sometimes fails. Given a well ordered and well equipped sanatorium, however, it offers decided advantages over home treatment in the earlier stages of the disease and until the patient has become educated. All admit that a small number of patients should be kept at home from the beginning; e. g., such as present acute symptoms, until these have subsided. I think the claims made by Dr. Ringer for sanatoriums situated some distance from home have been well established by his arguments.

DR. PAUL H. RINGER, Asheville, N. C.: With regard to people who will not get along under sanatorium regimen, leaving out the unfortunately large number that have too much tuberculosis to be able to conquer their disease, the failure is due to three factors in the patient, as I see it; namely, homesickness, wilfulness and ignorance. The homesick may adjust themselves in time, but we all see individuals that have to be sent home simply because going home is the only cure for homesickness. The wilful who will not accommodate themselves to the regimen had best be sent home in short order. The ignorant form a large and a sad group because education is a matter of years, and often one fails in one's attempt to impress the patients with the importance and the significance of the cure simply because they haven't got gray matter enough to comprehend them. I agree partially with what Dr. Anders has said with regard to the length of time that a patient should stay in the sanatorium. If a patient is not fully cognizant of the regimen to be followed after from nine to twelve months, he probably never will know it. He should by that time be thoroughly trained. Also after about a year or so in a sanatorium the patient often goes stale. He may not be dissatisfied but he simply gets stale, gets tired of routine which necessarily must permeate any institution. Such a patient may do well at home provided the home conditions are such that he can pursue the course of treatment satisfactorily. Unfortunately, in too many cases the conditions are such that he cannot, with the best of good will in the world, proceed at home as he would in the sanatorium. I have found that, in certain of those cases in which the home conditions were obviously unfitted, it was best to transfer the patients to some other sanatorium.

AN EVALUATION OF AGENTS THAT DESTROY OR REMOVE MALIGNANT DISEASE *

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Any agent capable of destroying living tissue may destroy or remove cancer. The term cancer is here used in its general application to malignancy. Any one who has given the subject serious study must admit that, under certain conditions and at various times, cancers have been completely cured by a great variety of agents which, under other conditions, have signally failed.

A more careful consideration of the conditions under which cancer may be susceptible of complete removal or destruction and of the limitations peculiar to each kind of remedy that has been known to destroy it would aid materially in affecting a higher percentage of cures.

Until the specific cause of cancer is known and some specific remedy capable of reaching cancerous disease at points remote from the local point of origin is discovered, it is obvious that the only hope for recovery in any given case must be predicated on the complete removal or destruction of every bit of cancerous tissue involved in the local disease or of the adjacent tissues accessible to direct application of agents capable of destroying it. After incomplete destruction or removal, the amount of remaining cancerous tissue capable of or necessary for the reproduction of the disease has not been determined. No one can deny that one uninjured cancer cell or possibly a dozen of them clumped together might be responsible for recurrence of a cancer which for a time may have appeared to be completely removed.

The confusion of tongues among the builders of the Tower of Babel was no more disastrous to the progress of that misreckoned undertaking than has been the confusion of observations pertaining to the conditions under which cancer is susceptible of cure and the limitations of the various agents that have figured so conspicuously in the somewhat frequent cures of this monstrous disease.

Deductions without regard to classification of degrees of malignancy and without reference to remote metastasis, which frequently is indeterminable in high grade cancers, and deductions made without notice of recent trauma to the diseased tissues, which may have caused remote metastasis just before treatment was begun, are necessarily confusing and in a large measure useless in determining the efficiency of any remedy or mode of treatment.

An unwarranted number of hopeless cancer patients are subjected to radical surgical treatment and, whether treated for palliative, psychologic or mercenary reasons, they are often included in statistical calculations that are designed to determine the value of the remedial agent applied.

Were it possible, elimination from radical treatment of all positively incurable patients would be the first step toward clarification of this most complex subject. Statistical studies of cancer cures would be greatly clarified if the studies were limited entirely to local disease and to metastasis involving only the nearest group of accessible lymph nodes. Records of local recurrences within, or their absence from, these areas would be of infinitely greater value than any records of living patients at three and five year periods after treatment which disregard the question as to whether the patient had local recurrence or later died of remote metastasis.

It is clearly understood by scientific men and the public also should have knowledge of the fact that generalized cancer and cancer involving inaccessible or unremovable organs, such as the lungs, heart, liver and pancreas, cannot be cured but that, as long as cancer involves any other accessible part and is purely local, it is to be considered curable. In fact, when local cancer is treated by the most dependable method of complete removal or total destruction in situ, it is one of the most easily cured diseases with which the surgeon has to deal.

In young people and in pregnant women, in all of whom cell activity is great, the rapid spread of the disease by both permeation and metastasis is so early that it is somewhat unusual for a diagnosis to be made before the disease has metastasized beyond points of accessibility. Consequently, statistical studies to determine the value of any remedial agent applied to such points are liable to be confusing and misleading.

Low grade cancers, coming within Broders' classifications 1 and 2, are with few exceptions easily destroyed by ample dosage of any agent capable of destroying living tissue. Low grade cancers are often cured by chemical cauterization, especially when cancer cells have not penetrated deeply into the tissues.

Often one may with a fair degree of accuracy estimate the limits of local disease, but it is not possible to measure in advance the exact depth to which any agent applied to the surface may penetrate and totally destroy the tissue involved in disease, whether the agent is a chemical cautery, x-rays, radium or the heat from a soldering iron.

With the possible exception of destructive heat, any disturbance of a cancer by trauma or the irritation resulting from partial or piecemeal destruction is detrimental because the malignant cells not actually destroyed may be stimulated to greater activity. Moreover, the superficial healing which follows superficial destruction may mislead both doctor and patient while the disease progresses beneath; and the uncertainty of reaching to the very depth of the disease may often lead one to procrastinate until the disease has advanced to a more serious stage or to the point of incurability.

What has been said regarding the effect of partial destruction of low grade cancers applies with greater force to the higher grades of malignancy.

The discovery of both roentgen rays and radium gave great hopes for the eventual mastery of this disease, especially because of their ability to destroy cancer cells without destruction of normal cells. However, after years of observation it has been found that, to make certain of total cancer cell destruction, it is necessary to destroy adjacent normal tissue, and it seems to be impossible to measure with accuracy the depth to which cancer cells can be totally and safely destroyed by these two powerful agents without doing irreparable damage to uninvolved tissues, which are often vital to life or to important functions.

Though disappointing in a large measure, x-rays and radium have a field of usefulness. They have done so much good and so much harm that it is difficult to evaluate them even approximately. There is but little doubt that roentgen rays may inhibit active cancer growth and thereby prolong life. Certainly they may be of great psychologic value in the treatment of many

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hopeless cases. Pfahler and Parry,[1] Westermark[2] and Bruttin[3] have compiled statistics of cases, in which postoperative irradiation was given for breast cancer, which make it appear that surgical results are greatly augmented by irradiation, but their deductions are not at all in harmony with those of many other good observers. More time and a great deal more data will be necessary to determine this question.

Both roentgen rays and radium are often misused in superficial cancerous lesions. Their use in superficial lesions seems to be justified only when cosmetic aspirations warrant the risk of selecting an agent which is so uncertain of cancer cell destruction while restricted to safe dosage. Efforts to obtain good cosmetic results by giving radium and roentgen rays the preference over surgical removal have cost many lives in cases in which proper surgical removal was entirely feasible and could have been easily performed.

In certain locations where wide surgical excision cannot be accomplished, radium has a distinct field. This is particularly noticeable in cancer of the uterus and of the vault of the vagina, because it is extremely difficult to remove a cancerous uterus without leaving the wound contaminated with cancer walls. The best results in this field are obtained when the low-temperature Percy cautery is heroically used and followed by large doses of radium.

The implantation of radium according to the method of Moore,[4] Handley,[5] Trout and Peterson[6] and others, following the surgical removal of breast cancer, gives promise of an increased percentage of permanent cures when mediastinal metastasis has occurred, but in old persons and in those suffering from cardiac disease, the danger of injury to the heart and the pericardium will probably forbid its practical use on the left side.

The interstitial use of radium for breast cancer, without surgical removal, as advocated by Keynes,[7] Warwick[8] and other English surgeons, bids fair to become popular for a time, but when surgical removal is at all possible the value of radium as a substitute is questionable, and it should be considered with great caution. It cannot be applied within cancer tissue areas without distinct trauma, and it must be remembered that there is known no better means of quickly disseminating cancer cells than by trauma.

Surgical removal by wide excision with the scalpel has proved beyond a reasonable doubt the most exact and most dependable of all single agents for the destruction of cancer. Because of the numerous open lymph vessels remaining at the close of an operation done with a scalpel and many opportunities for contamination of the scalpel which may carry diseased cells into healthy tissues, it also has fallen far short of what otherwise might reasonably be expected of it. To this difficulty is added the associated danger of habitually using gauze sponges for the removal of cancerous lymph nodes and vessels, which are easily torn or mashed, thus occasionally contaminating everything in the neighborhood with cancer cells and furnishing a favorable opportunity for local recurrence of the disease. Unquestionably, local recurrence is entirely too common after surgical removal of cancer by good surgeons. Recognition of this fact may account for the readiness with which many English surgeons are accepting Keynes's method[7] of interstitial application of radium for breast cancer, without surgical removal.

The use of heat in the treatment of disease dates back at least 4,000 years, when it was used by the Chinese as a smoldering fire, the moxa, and from the time of Hippocrates down to the latter part of the nineteenth century its use was largely confined to the soldering irons or similar instruments applied to cancerous masses, burning them in situ. Though crude in its application and, consequently, cruel in its effects, intense heat thus applied has been used with varying successes and failures throughout the centuries. Periods of great popularity followed by relentless condemnation are noted in its history.

A more refined application of heat became possible with the invention of the Paquelin cautery about sixty years ago. This device, heated by means of benzine vapor, gave splendid control of heat. Prior to the discovery of a means of heat control by electricity, it was the most valuable device at the surgeon's command for the excision or local cauterization of small malignant growths or ulcers.

It was with the Paquelin cautery that I did my first cautery excision of a superficial cancer, after two previous unsuccessful efforts had been made with the scalpel. And it was while working with this instrument in 1914, removing metastasized cancer nodes of the neck, that I was led to the discovery that skin incisions and flap reflections can be made with intense concentrated heat without visibly burning the tissues and without interference with primary union when such wounds are closed by suture.

Three excellent electrical devices giving still better control of heat and popularly known as the Percy cautery, the Downes loop cautery knife and the diathermy, endotherm or radio knife have been developed.

The principle involved in the Percy cautery is based on heating with an electric current a central core, which radiates heat to a metal cap or tip. In the large instrument used by Percy, the removal of large cancerous masses and the radiation of heat into the tissues not removed has done much good but, like the soldering iron, its slow burning, consequent sloughing and inevitable long convalescence have deterred many surgeons from making use of it.

Some of the smaller instruments, known by various commercial names but working on the same principle, cool too quickly and reheat too slowly for anything more than minor operations.

The diathermy or endotherm knife and the radio knife are alike in that they give heat control by passage of a low voltage, high frequency current through the patient's body, closing the circuit in the tissues at the point of contact of a small spatula, which is attached to a suitable handle.

For convenience of this discussion, the term radio knife will be used. The radio knife is not sharp and, without heat, does no cutting. The cutting is done by the concentrated heat of the current at the point of contact with the tissues. The radio knife does not radiate heat on the surface, and unless it is plunged well into the tissues it does not get very hot. It should be understood that there is no virtue in electricity for destruction of cancer except from the heat produced at or near the point of contact of the metal with the tissues.

1. Pfahler, G. E., and Parry, L. D.: Results of Roentgen Therapy in Carcinoma of the Breast, J. A. M. A. **94**: 101-105 (Jan. 11) 1930.
2. Westermark: Acta radiol. **11**: 1, 1930.
3. Bruttin: Rev. méd. de la Suisse Rom. **50**: 73 (Feb. 25) 1930.
4. Moore, J. T.: Texas State J. Med. **24**: 474-475 (Nov.) 1928.
5. Handley, W. S.: Practitioner **125**: 453-461 (Oct.) 1930.
6. Trout, H. H., and Peterson, C. H.: Cancer of the Breast: Use of Radium and Roentgen Therapy in Conjunction with the Radical Operation, J. A. M. A. **95**: 1307-1310 (Nov. 1) 1930.
7. Keynes, G.: Lancet **1**: 439-442 (March 1) 1930; Practitioner **125**: 462-468 (Oct.) 1930.
8. Warwick, W. T.: Lancet **1**: 1341-1342 (June 21) 1930.

A sharp distinction should be made between the functions of cutting and of deep coagulation. If one desires to cut tissues with the purpose of closing the wound by suture in anticipation of primary healing, no effort should be made to secure coagulation as the incisions are made. Coagulation is not conducive to certain primary union; so the radio knife should be passed along the tissues as rapidly as possible while the high cutting current is being used. Hemostasis can be controlled best by hemostatic forceps, with or without ligation. Coagulation with cutting has a distinct place, as Cushing [9] has shown, in the removal of vascular tumors of the brain. It is also valuable in excision of part or all of the tongue and for the removal of cancerous masses whenever immediate closure of the wound is not contemplated.

Heat control with the radio knife is well nigh perfect for making incisions and flap reflections and for cutting muscles and dense fascia, but one has no control over the direction of the hot current as it leaves the point of the instrument. Like minature lightning, the current follows lines of greatest conductivity. The low cutting current will not cut fat and delicate areolar tissue, in which lymph nodes and vessels are most abundant, and the high cutting current is dangerous in close proximity to large vessel and nerve trunks from which it is desirable to dissect lymph-bearing fat without resorting to gauze sponges with their inevitable trauma. One need only remember that the vessels and nerves are better conductors than fat. It is therefore often impossible to make a clean dissection of fat and lymph nodes from their surface with the hot current delivered from the point of a radio knife. The unipolar high coagulation current is said to permit safer dissection near the walls of large vessels, but it has not proved to be practical in my hands.

The radio knife presents another difficulty in the matter of control when removing muscle and fascia from the chest wall in breast amputations. Owing to the erratic conductivity of the current in the tissues, when the radio knife touches a rib near its margin the current may run beneath and behind the rib and puncture the pleura, as it did in one case in which the perforation served to admit air into the pleural cavity with each inspiration and then with valvelike action partially closed against the rib, permitting the air to be forced between the rib and the parietal pleura. This resulted in passage of air up the chest wall into the soft tissues of the neck, and thence to the face and scalp, resulting in most intense emphysema of the neck, face and scalp. This was accompanied by the most profound shock I ever witnessed following a breast amputation. Another danger, to which Muller has called attention, is that of severe burns arising from improper application of the indifferent electrode.

The Downes loop cautery knife, for which the term hot knife or hot loop knife would be most appropriate, is dependent for its heat on the passage of an electric current through a loop of resistant metal made of various alloys which have a high melting point. Though the initial cost is greater, platinum in the end has proved much more dependable and economical than other metals. The metal loop is flattened and its edges beveled to the thinness of a butter knife. Blunt-edged metal tips, advocated by the commercial trade, will not cut without cauterizing, except at extremely high temperature, which may melt the loop and frustrate the surgeon's efforts. The bevel-edged loop should be welded into brass or copper rods fastened in a ventilated handle and welded to an insulated cable, thus reducing the heat in the handle and securing dependability by eliminating all joints between the loop knife and the transformer rheostat.

The heat in this instrument is under most perfect control. The electric current is confined to the loop knife and does not pass into or through the patient's body. At a low temperature it may be used for slow cauterization, slow cutting with coagulation, and hemostasis, or it may, at a high temperature, cut like the sharpest scalpel, without visible burning of the tissues through which it passes. It is not so delicate as the radio knife, but at low temperature it fairly melts delicate cancer-bearing fat and fascia from the walls of blood vessels and nerve trunks, without injury to them. In its passage back and forth it radiates heat on the surface of wounds, thus sterilizing any malignant cells that may have escaped from the tumor mass or from injured lymph nodes and vessels.

The value of controllable heat as a substitute for the surgeon's scalpel cannot easily be overestimated. Cancer cells are rendered sterile at less than 120 F., so that, when surgical removal of all accessible cancerous tissue is accomplished by concentrated heat, one has the combined advantage of surgery and heat, the two most potent agents known for eradication of disease.

One may spread disease with a cold scalpel, but it is impossible to spread any kind of disease with a hot instrument. The hot knife has the advantage over all other agents in that its effect is instantaneous and its range of destruction is controllable to less than a millimeter's thickness.

Microscopic cross sections of skin incised by means of either the radio knife or the hot loop knife, when properly done, show but a thin veil of dead cells on the cut surface. Evidence of complete coagulation may be seen only 10 microns, or $\frac{1}{2,500}$ inch from the cut margin. Deeper coagulation than this or failure to secure sound primary union is evidence of too slow passage of the instrument through the incised tissue.

The dangers and difficulties with the hot loop knife are more or less imaginary and the technic required for its successful use can be acquired by any well trained surgeon who will take sufficient time to master a few essential details.

While cancer may be destroyed by various chemical agents, or by radium and roentgen rays, serious difficulties arise from one's inability when using these agents to measure sharply or to control accurately the depth of penetration and destruction of tissues involved in the disease.

In the light of our present knowledge, surgical removal gives the best possible chance for permanent cure of cancer, and the utilization of intense heat under perfect control by means of the electrical loop knife augments the efficiency of surgery to a degree hitherto unknown.

1 East Avenue A.

9. Cushing, Harvey: Surg. Gynec. Obst. 47: 751-784 (Dec.) 1928.

ABSTRACT OF DISCUSSION

DR. GEORGE A. WYETH, New York: Dr. Scott reminds us that deductions on cancer are in a large measure useless if they are made without regard to classification as to the degree of malignancy. This is true and should be emphasized, but of value also is information as to the lesion's radiosensitivity or radioresistance, an important biologic observation which Dr. Scott has entirely overlooked. It is now possible, as part of office routine, to take by means of the biopsy electrode a piece of tissue for immediate examination by the rapid frozen

section method. Thus can one learn before beginning treatment, or in time to be of service to the patient, the degree of malignancy and whether the growth should first be irradiated. That Dr. Scott is mistaken in most of his comments on the use of the cutting current is probably because he has not followed the more recent surgical literature on the subject. When he speaks of the unipolar high coagulation current, just what does he mean? There is the unipolar current, perfected by Dr. Clark and used for the desiccation of superficial lesions; and there is the bipolar current which destroys by coagulation. But the one is not the other, as Dr. Scott seems to think. There is a third, the cutting current, operating through a needle, which is always cold when applied, making its incision by heat developed in the tissues from within. All three currents are alike in that all three are perfectly controllable by the experienced operator. This is one of the important points of superiority of endothermy over Dr. Scott's cautery method. That reported case of perforation of the pleura should never have occurred. We have performed many radical breast amputations by electrosurgery and all of them without perforating the pleura. Dr. Scott says he would eliminate from radical treatment all positively incurable patients as a first step toward clarification. But who can say that a patient is positively incurable? Should one not rather endorse that modern trend which seeks to develop new methods for cases hopeless under old methods of treatment? It seems safe to say that the ultimate contribution to the cure of cancer will be made by the advocate of no single method. If we correlate the knowledge offered by the pathologist and clinician as to varieties of cancer and as to individual susceptibility to treatment, the number of so-called inoperable cases will steadily diminish.

DR. L. G. BOWERS, Dayton, Ohio: Several years ago I visited Dr. Scott's clinic in order to observe his technic in cautery treatment. Since that time we have used it almost to the exclusion of other methods of dissection in the excision of cancer of the skin, breast, mouth, lip, and associated lymph nodes. I should like to emphasize that an assistant who is especially trained in the use of the electrical knife cautery is an invaluable aid in such operations. In order to obtain the desired degree of white heat of the knife (about 2,800 F.) to make clean and rapid incisions in the skin and to obtain the proper degree of red heat for deeper dissections, it is necessary that the skilled assistant should anticipate every movement of the operator. I have found that the best results are obtained when the cutting is done with the distal half inch of the cautery knife. This avoids the rapid cooling of the knife by the liquid fat. In my early experience with cautery excision of malignant growths of the mouth, I had only moderate success because of cosmetic considerations. During recent years I have made much wider excisions with block dissection of the regional lymph nodes without considering the cosmetic results. Since adopting the more radical cautery excision I have had much better results. More recently I have employed the radio knife with encouraging results. It is more necessary to be cautious in dissections near large blood vessels with the radio knife than with the loop blade knife cautery, since the speed of cutting is much more rapid and the likelihood of injury to the large vessels is much greater.

DR. J. TATE MASON, Seattle: I do not believe that any of us would disagree with Dr. Scott on the advisability of the application of heat in the removal of localized malignant growths. The problem is what kind of heat should be used and what kind of heat that can be obtained that can be used conveniently. Should a radio knife or diathermy or something like these be used or should the actual cautery, which Dr. Scott advocates, be used with different degrees of heat to each tissue, or the hot iron that is being used by Percy? In using the actual cautery, to which Dr. Scott has referred in his paper, for the removal of malignant tumors there are certain essential facts that must be considered for the protection of the tissues. The loop that one gets from the manufacturer is usually a trifle too blunt and must be filed down until it is approximately the thickness of an ordinary butter knife. If it is filed until it is as sharp as an ordinary scalpel, it will be so sharp that when the edge touches the skin it will become immediately cool at each place where the loop cuts when not at a white heat, and periods of sloughing will occur. It is essential that the skin be on a tension when it is severed by the loop so that it will fall immediately away from the hot cautery. Small, short strokes should be made, and the cautery cooled each time; otherwise one will lose time in the operation and will incur a certain amount of expense in the use of a number of cauteries. Once the problem of severing the skin has been overcome, the rest of the problem is simple. Fat usually cuts easily with a white heat, muscle with a bright cherry red heat; but when one gets up close to the large blood vessels a dull red cherry heat should be used. Probably the reason the cautery has not been universally used is that the fact has not been appreciated that, when skin is severed and one expects primary healing as from an ordinary scalpel, it must be cut with heat approximating around 2,700 or 2,800 F., at which temperature the cautery is at a white heat. There are certain disadvantages in the use of this particular cautery, which can be overcome only by a certain amount of team work. The individual who controls the heat of the cautery and the operator himself must see the loop practically all the time. I believe that, when the different degrees of heat that should be used are thoroughly understood, the skin will heal as nicely and wounds will heal as kindly following a cautery operation of the breast—to which this is particularly adapted—as after the use of an ordinary scalpel.

DR. JAMES F. PERCY, Los Angeles: With the small loop cautery or the high frequency knife one is not going to meet the problem of carcinoma in the intercostal muscles or where the vessels are fixed in a mass of cancer. They are not capable of furnishing a sufficient degree of heat, and heat is the necessary thing in the destruction of cancer. I want to emphasize, however, that these instruments are a vast improvement on the cold knife in the treatment of any accessible malignant growth, as cautery heat, I repeat, disorganizes the cancer cell and its environment as does no other agent or method. From my experience the treatment can best be met by the employment of a heavy cautery capable of disseminating a cancer killing degree of heat sufficiently deep and wide to destroy active cancer and at the same time not cause excessive damage to important tissues not involved in the disease. Radioactive methods are still on trial in the treatment of this disease. The complications that frequently follow their employment are often worse for the patient than if no treatment had been given. Within a month I have seen four women with intestinal obstruction following the previous application of radium and high voltage therapy to a carcinomatous cervix. There was no clinical evidence of the disease left in the cervix, but all four of the women required emergency colostomies and a later Miles operation because of radiation burns in the pelvic sigmoid. True, this has not been common in my experience; but the query is justified How many more patients will experience these late rectal radiation burns following the treatment of their cervical cancer in the years to come? Dr. Scott mentioned the current that ran along the rib and perforated the pleura. Recently there was a similar occurrence in Los Angeles. A small growth was removed from the skin of a woman patient by surgical diathermy. The operation was simply and quickly done. In three or four days the patient developed symptoms of intestinal obstruction and died. Necropsy disclosed a punched out hole in the small intestine about the size of a dime (18 mm. in diameter). Its edges were perfectly smooth. Those who advocate surgical diathermy insist that this accident cannot occur, but nevertheless it can occur although probably but rarely.

DR. A. C. SCOTT, Temple, Texas: First I wish to refer to the matter of my not understanding the diathermy knife or endothermy knife or radio knife, whichever one chooses to call it. I wish to say that I confess I do not understand it. I have done but seventeen breast operations, and I did those after getting instructions from Dr. Wyeth and some other people who disagree with him, because I have not found any of them who agree with one another. I was about that much as I was about learning to run an automobile. First I thought I would have to know how to adjust carbureters and all that sort of stuff. Later I found out the principal thing was to know where the gasoline was and how to shut it off and how to put on the brakes. That is about the principal thing that I learned about the radio knife. So far as I can learn, the radio knife, the diathermy knife, the endothermy knife, are all

the same, with little different adjustments on the machinery; some of them have got different carbureters. I am glad indeed to have Dr. Percy make the remarks he made about the difference in his point of view and my point of view. The real fact is there is a big field of usefulness for intense heat, moderate heat, and heat used as Dr. Percy uses it. One who has not seen Dr. Percy do some of the radical work he does in cases that are ordinarily passed as hopeless cannot begin to appreciate the fact that every now and then he snatches somebody from the grave when everybody else has given up all hope. The value of removing cancer by heat cannot be overestimated. Certainly the part that has been neglected most has been that which we are undertaking to do nowadays in which we make a complete excision of the tumor and then if the cancer is of a high degree of malignancy, we do a block dissection, removing the lymph nodes of the neck or the axilla or groin. Certainly radical operations without the removal of metastasized lymph nodes which are accessible stop far short of their usefulness if they fail to include the neighboring lymph nodes. The radio knife and the loop cautery can be made to cut the skin very much alike. I am sorry I cannot go into all the details, answering all the points brought out in the discussion, but I want to emphasize again that there is a difference in doing a slow cautery operation and doing one that is intended to be a finished surgical operation in which one has all the advantages of the scalpel and none of the disadvantages.

ARGYRIA FOLLOWING EXCESSIVE USE OF SILVER ARSPHENAMINE *

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The use of silver compounds in medicine has been largely discontinued, with the exception of certain substances, mostly colloidal in nature, which are used externally. The reason for the discontinuance of internal administration of silver salts was the danger of the production of argyria, a grayish discoloration of the skin due to the deposition of metallic silver in the superficial dermis and the superficial connective tissue of the mucous membranes. The introduction of silver arsphenamine into syphilotherapy has been watched with interest and a certain amount of skepticism, many syphilologists having been reluctant to use the drug because of the possibility of the production of argyria. Representatives of the manufacturers have insisted, at least until recently, that no bona fide case had been reported of argyria following the use of silver arsphenamine. The first apparent case was reported by Habermann.[1] Spiegel [2] has recently reviewed the literature and has recorded three cases of a discoloration of the skin resembling argyria following the use of silver arsphenamine and bismuth and has presented excellent laboratory data to show that silver arsphenamine should be incriminated.

We have had occasion to study the following two cases of argyria following excessive use of silver arsphenamine:

CASE 1.[3]—A man, aged 53, was admitted for examination and evaluation of a syphilitic infection. He had not particularly noted the discoloration of his skin. He had been found to have a positive Wassermann reaction of the blood five years before admission. The examination of the spinal fluid was said to have been negative. He had been treated with neoarsphenamine and some intragluteal injections. In addition, he had received sixty injections of silver arsphenamine, the total dosage being 16.5 Gm., over a period of four years.

The general physical examination was negative with the exception of the pigmentation of the skin. The patient's skin presented a faint grayish metallic tint, most noticeable on the scalp, face, neck and hands. The oral mucous membrane was cyanotic. The grayish tint was present on other parts of the body.

Kolmer, Wassermann and Kahn precipitation tests of the blood serum were strongly positive; urine examination was negative.

CASE 2.—A man, aged 39, a printer, was admitted with a provisional diagnosis of Addison's disease. His complaints were weakness and loss of weight for four years, discoloration of the face for four years, hoarseness for four months and deafness for three months. The weakness and loss of weight had been associated with a productive cough and occasional hemoptysis.

The family history was entirely negative.

His past history revealed a chancre in 1916. He had received treatment for syphilis as follows: 71 injections of neoarsphenamine, a total dosage of 48.9 Gm., and 100 injections of mercuric salicylate, a total of 4.3 Gm., from August, 1921, to April, 1924. This was followed by 57 injections of silver arsphenamine, a total dosage of 17.1 Gm., and 81 injections of a proprietary preparation of bismuth, a total of 16 Gm., from May, 1924, to July, 1926. This in turn was followed by 22 injections of sodium thiosulphate.

The patient was a man of moderate stature but emaciated. Examination of the chest showed an extensive tuberculosis involving both lungs. The heart was normal. The liver was not palpable and there were no tumor masses in the abdomen.

The entire cutaneous surface showed a marked uniformly diffuse cyanotic tint, more pronounced over the face, the exposed region of the neck and the hands. The oral mucous membrane was uniformly metallic gray.

The Wassermann reaction of the blood was negative while the Kahn precipitation test was moderately positive. The urine was normal. Many acid-fast bacilli were found in the sputum.

In both cases skin was removed from the nuchal region. Sections stained with pyronine methyl green showed many minute uniformly sized, brownish granules throughout the upper part of the corium. These granules were massed together in some areas to form clumps, while most of them were found extending along the collagen bundles. Melanoblastic cells were seen along the basal portion of the epidermis in sections stained with silver nitrate, but their number was not sufficient to produce hyperpigmentation due to melanin.

Unstained sections were then treated with hydrogen peroxide, ammonium hydroxide, a 50 per cent solution of nitric acid, concentrated acetic acid, and a 10 per cent solution of potassium cyanide. This method of differentiating silver granules from other foreign material is described by Kobert.[4] The granules were not soluble in these reagents although it was difficult to determine any discoloration of the granules after treating with nitric acid and potassium cyanide as mentioned by Kobert. Stained sections were examined under dark field illumination. Myriads of highly refractile granules were seen throughout the corium, starting from the epidermal-dermal junction down into the corium. These granules appeared to envelop the collagen bundles and were present around the adnexa. Spiegel has stated that this dark field method differentiates the granular deposit from hematogenous pigment. The prussian blue reaction for iron was negative.

Spectographic analyses were not made in these cases.

COMMENT

It seems to have been demonstrated beyond reasonable doubt that administration of silver arsphenamine can lead to the production of argyria. The clinical appearance of our patients was that of argyria. No

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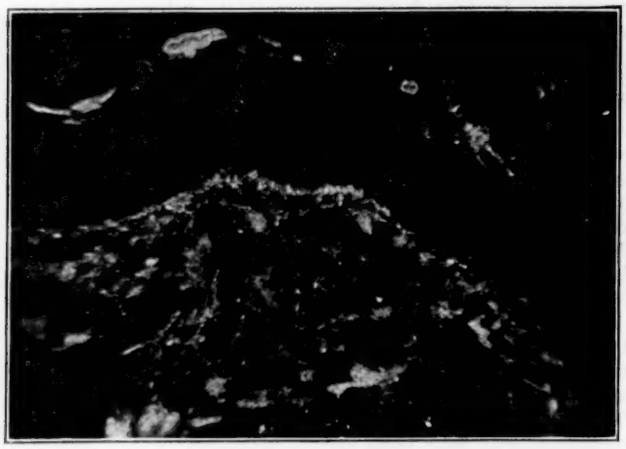
1. Habermann, R.: Ueber Argyria Cutis nach Silbersalvarsan und der Wert der Leuchtbildmethode E. Hoffmans für ihren Nachweis, Dermat. Ztschr. **40**: 65 (Jan.) 1924.

2. Spiegel, Leo: A Discoloration of the Skin and Mucous Membranes Resembling Argyria Following the Use of Bismuth and Silver Arsphenamine, Arch. Dermat. & Syph. **23**: 266 (Feb.) 1931.

3. Presented at the Scientific Section of the Division of Dermatology of the Department of Medicine of the University of Chicago, Nov. 11, 1930.

4. Kobert, R.: Ueber Argyrie in Vergleich zur Siderose, Arch. f. Dermat. u. Syph. **25**: 773-789, 1893.

iron containing pigment could be found to suggest hemochromatosis, and no features of addisonian melanosis were present. In the discussion of case presentations by Spiegel,[5] the possibility of the discoloration of the skin being due to deposits of arsenic or bismuth was considered. Bismuth granules would have been dissolved in a 50 per cent solution of nitric acid in sections from our two patients. We examined the skin



Section from nuchal region, showing granule in superficial dermis. Dark field illumination, pyronine methyl green stain; reduced from a photomicrograph with a magnification of 625 diameters.

of one patient who had received large amounts of neoarsphenamine and bismuth and could find no granules whatever on dark field examination. We also examined the skin of a patient who had received six injections of silver arsphenamine, along with neoarsphenamine and some intragluteal injections, to determine whether there was deposition of minute amounts of silver from even a small amount of silver arsphenamine. No granules could be seen, even by dark field examination.

It would seem from the evidence available that no valid contraindication can be advanced to the use of silver arsphenamine in competent hands but that overdosage is distinctly dangerous as regards production of argyria. Spiegel has set the maximum dosage for safety at 8 Gm. In both of our cases the total quantity of silver arsphenamine was over 15 Gm., above which argyria is apt to be produced, according to Habermann, Sioli and Mucha.[6]

SUMMARY

Two cases of argyria following overtreatment by silver arsphenamine are reported. The clinical diagnosis was subtantiated by histologic examination, including histochemical studies. Administration of 15 Gm. or more of silver arsphenamine is apt to be followed by argyria.

5. Spiegel, Leo: Case Presentations, Arch. Dermat. & Syph. **22**: 520 (Sept.) 1930.
6. Quoted by Spiegel (footnote 5).

Evolution Traced Biochemically.—The primal organism, the protocyte, was ultramicroscopic in size, was of comparatively simple constitution, and began as a product of the union in a special complex of a number of amino acids which were formed from constituents of the atmosphere when the condensations of water vapor, at or below 100 C., were continuous, and when also evaporation of small isolated bodies of water concentrated the amino acids in them and rendered the synthesis of them to complexes, millions in number, one of which, of special constitution, had, to use Tyndall's expression, "the promise and potency of all terrestrial life."—Cowdry, E. V.: Human Biology and Racial Welfare, New York, Paul B. Hoeber, Inc., 1931.

Clinical Notes, Suggestions and New Instruments

ECZEMA DUE TO LEMON PEEL

S. J. FANBURG, M.D., AND J. G. KAUFMAN, M.D., NEWARK, N. J.

No case of eczema due to lemon peel could be found in the literature; hence this report.

J. H., a white man, aged 23, was employed by a beverage manufacturing company for four weeks. A week after he began work he was assigned the task of peeling lemons by hand. Itching sensations, followed by an eruption on the hands and forearms, began soon thereafter. In the midst of the peeling operation he would rub both hands and arms to get relief. When first seen, May 2, 1931, he presented an erythematous, vesicular eruption on the dorsum of each hand and on the anterior and posterior aspects of the forearms. A few scattered minute pustules were on the back of the hands. An erythematous vesicular eruption was found on his chin and neck.

Contact tests were carried out with fresh lemon peel and lemon juice. These were negative for the lemon juice, but after twenty-four hours the area tested with the peel presented an erythematous, vesicular eruption similar in type to that on the hands and arms. Control tests carried out in other patients gave negative results.

Under soothing applications, the eruption gradually disappeared.

31 Lincoln Park—299 Clinton Avenue.

AN OXYGEN CHAMBER SIMPLIFIED IN DESIGN AND OPERATION *

ALVAN L. BARACH, M.D., NEW YORK

In 1926 I [1] described a ventilated oxygen tent in which adequate cooling and drying of the air was achieved by passing the air directly over chunks of ice instead of through metal coils. It was found that this provided a more comfortable atmosphere for the patient than had been formerly secured.[2] Since that time, I have modified the tent by providing an increased ventilation as well as a rheostat which regulates the degree of air movement and thus the amount of cooling of

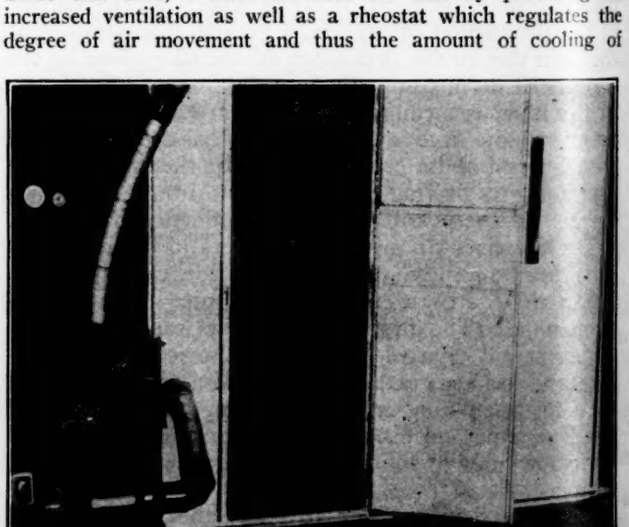


Fig. 1.—Portable oxygen chamber.

the air necessary, a factor that varies in individuals of different weights. Thus, infants require a higher atmospheric temperature, and the air flow through an ice and salt mixture should be much reduced. Children and small adults give off less heat

* From the Department of Medicine, Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital.

1. Barach, A. L.: A New Oxygen Tent, J. A. M. A. **87**: 1213 (Oct. 9) 1926.
2. Roth, Paul: Bull. Battle Creek Sanitar. & Hosp. Clin. **19**: 178, 1924. Barach, A. L., and Binger, C. A. L.: A Portable Oxygen Tent, J. A. M. A. **85**: 190 (July 18) 1925

than adults and need a moderate air movement, whereas large adults should have a large air movement to lower the atmospheric temperature within the tent and to deprive the air of the moisture given off. A dust filter has been added for the treatment of dust asthma. In addition, I have found that the carbon dioxide exhaled by the patient is in part diffused through the rubberized fabric of the tent and in part dissolved on the watery surface of the melting ice. The ice chambers contain ice and salt. Water at 33 F. absorbs almost twice an equal volume of carbon dioxide. It is, therefore, no longer necessary to employ soda lime to remove carbon dioxide in this type of oxygen tent. It is of great importance for the comfort and safety of the patient that oxygen tents be adequately ventilated to secure a humidity of 50 per cent, or

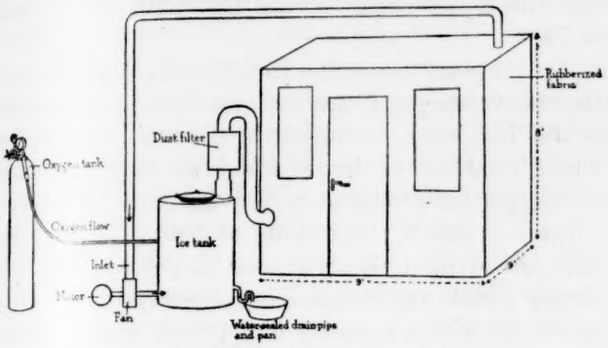


Fig. 2.—Details of portable oxygen chamber.

under, and a temperature which should never be above that of the outside air and which should preferably, under ordinary circumstances, be below 70 F. If a patient is placed in a confined atmosphere with slight or no ventilation and an inadequate cooling apparatus, high temperatures and humidities inevitably result, with disagreeable and harmful consequences, despite the fact that the oxygen concentration may be elevated.

I[3] have previously described an oxygen chamber ventilated by thermal circulation of the air. The present report is concerned with an oxygen chamber which may be visualized as an extension of the oxygen tent as previously described. An angle iron framework supports a rubberized fabric, which may be made any size. The first chamber of this type constructed was 9 by 9 by 8 feet. Outside the chamber, a large metal tank capable of holding 300 pounds of ice with a 4 inch opening at the top and at the bottom constitutes the cooling apparatus. A one-half inch drain pipe delivers water melting from the salt and ice mixture. A silent motor blower unit capable of delivering 400 cubic feet of air per minute is placed on a small movable truck, along with the cooling tank, as shown in the illustrations.

The temperature with two patients in the chamber was lowered 10 degrees below the outside temperature, and the humidity decreased to between 35 and 45 per cent. The chamber is leak tight for oxygen but slowly diffuses carbon dioxide. A test was made in which two tanks of oxygen and one tank of carbon dioxide were admitted into the chamber, raising the oxygen concentration to 51 per cent and the carbon dioxide concentration to 7 per cent. In eight hours the oxygen concentration was still 51 per cent and the carbon dioxide was 0.5 per cent. In other words, without the use of soda lime there is a prompt elimination of carbon dioxide, partly by diffusion through the rubberized fabric and partly by solution on the water of the melting ice.

A light leak-tight door is made out of an angle iron frame, the body of which is made of the same rubberized fabric as the chamber itself. A small thermostatically controlled steam radiator is provided to regulate and maintain a constant temperature. The chamber is readily transportable and can be operated at a cost only slightly greater than the oxygen tent; namely, $12 a day instead of $9. The actual cost of the chamber itself is only moderately greater than that of the oxygen tent and thus constitutes an enormous saving over previous types of oxygen chambers, in all of which soda lime and a mechanism for the removal of carbon dioxide are necessary. Chambers with this material and cooling and drying apparatus may be easily made to accommodate from one to five patients, or even more.

3. Barach, A. L.: J. Clin. Investigation **2**: 463 (Aug.) 1926; Mod. Hosp. **32**: 144 (Jan.) 1929.

SUMMARY

An oxygen chamber is described which is simplified in design and operation over previous types of chambers. The carbon dioxide exhaled by the patient is eliminated, without the use of soda lime, by diffusion through a rubberized fabric and by solution in the water of melting ice. A silent motor blower unit passes 400 cubic feet of air over ice and salt contained in a large ice tank. An adequate range of cooling and drying the air is secured, and a radiator with thermostatic control regulates and maintains a constant temperature. The chamber can be used for hospitals as well as for private homes. The expense of operation is only slightly greater than that of the oxygen tent, and the actual cost of a chamber for one or two patients is also enormously reduced.

Improvements in the oxygen tent are described, and the dangers of increased temperatures and humidities in inadequately ventilated tents are emphasized.

117 East Seventy-Seventh Street.

MASSIVE INTRA-ABDOMINAL HEMORRHAGE FROM A RUPTURED CYST OF THE CORPUS LUTEUM

CHARLES W. OLSEN, M.D., CHICAGO

Mrs. A. S., aged 30, stenographer, nullipara, seen, Dec. 6, 1930, with a negative past medical history except a left mastoidectomy in 1922, felt perfectly well and ate a hearty supper. At 7 p. m. she was seized with a dull aching lower abdominal pain which in one and one-half hours became diffuse and with somewhat greater intensity on the right side. At 8 o'clock she became extremely faint, was pale, and was covered with a cold sweat. Physical examination at 10 o'clock was negative except for the abdomen, which was markedly distended and was tympanitic except at the sides, which were decidedly dull. Change in posture produced an increase in the dull area on the side on which the patient was lying, and a decrease in the dull area on the opposite side. The skin was cold and clammy; the expression was anxious; the eyes were staring; the pulse was 128 per minute and weak; the temperature was 100.2 F.; marked thirst was present. The preoperative diagnosis was ruptured ectopic pregnancy, apparently on the right side. On abdominal section, 950 cc. of fresh blood was found; the tubes and right ovary were normal; the left ovary showed active bleeding from a ruptured cyst on the posterior surface. The ovary was 4 cc. in diameter. Sections of the removed portion showed a corpus luteum cyst and localized oophoritis. Recovery was uneventful.

6458 South Halsted Street.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

EPHEDRINE SULPHATE-LILLY (See New and Nonofficial Remedies, 1931, p. 177).

The following dosage form has been accepted:

Elixir No. 229 Ephedrine Sulphate, 2 grains: Containing ephedrine sulphate-Lilly, 0.44 Gm. in 100 cc. (2 grains per fluidounce) in a menstruum composed of alcohol 2 per cent, glycerin, sucrose and water, flavored with gluside, oenanthic ether, oil of orange, oil of coriander, oil of caraway, oil of lemon, oil of cassia, oil of anise, safrol and vanillin.

VENTRICULIN (See New and Nonofficial Remedies, 1931, p. 238).

The following dosage form has been accepted:

Ventriculin, 100 Gm. Bottle.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, AUGUST 8, 1931

THE "IRON INDEX" OF THE BLOOD

Among the most striking features of the blood is its content of erythrocytes, unique as carriers of the characteristic respiratory pigment hemoglobin. In designating the especial chemical peculiarity of this remarkable substance, students inevitably refer to the presence of iron in amounts quite unusual for other components of the body. Methods are in vogue for the estimation of all these important items of the blood; namely, the number of its erythrocytes, the content of hemoglobin, and the amount of iron present. Although quantitative estimations of the iron content of whole blood were probably made more than a hundred years ago, fairly accurate data have been available since the middle of the last century.[1]

Somehow the use of iron determinations in blood has never achieved much popularity. Sherman [2] has pointed out that the amount of iron contained in the body is small—rather less than 3 grams, or hardly one-tenth ounce, in the entire body of a healthy full-grown person, or about 0.004 per cent, or 1 part in 25,000 by weight; yet its functions are of great importance. He adds that iron stands in the closest possible relation to the fundamental processes of nutrition, being an essential element both of the oxygen-carrying hemoglobin of the blood and of the chromatin substances that appear to control (in some degree at least) the most important and "vital" activities within the cells. In the normal body, most of the iron exists in the form of hemoglobin. The reserve store is presumably small, at best.

Interest in the determinations of the iron content of whole blood has been reawakened of late by Murphy, Lynch and Howard [1] of the Medical Clinic of the Peter Bent Brigham Hospital, Boston. They remark that, although a few determinations of the iron content of the blood under varying conditions have been made, there has been little effort to utilize these figures as a means of distinguishing between the various types of anemia or to follow the changes that may occur in the hemoglobin during the course of treatment for anemia by means of iron or other substances. The Boston investigators have established the "normals" for a representative group of young persons exhibiting an essentially normal hemoglobin level and red blood cell count. The average iron content of the blood in normal young men is 44.84 mg. per hundred cubic centimeters of blood, in normal young women, 42.48; and, in a group of sixty persons of both sexes and of varying age with an essentially normal blood, the average was 42.74.

For purposes of comparison, Murphy and his associates have suggested the use of a figure to be known as the "iron index," calculated by dividing the figure for whole blood iron by the red blood cell count in millions of cells per cubic millimeter. This figure normally varies between 8 and 9. According to observations by the Harvard Medical School group,[1] in pernicious anemia during relapse the iron index was always found to be above 10, with a tendency to approach normal during a satisfactory remission following treatment with liver. On the other hand, except in certain unusual circumstances, the iron index was found to be normal or lower than normal in chronic secondary anemia. Only in anemia resulting from acute loss of blood and in certain of the patients with leukemia was the iron index above normal and in the range generally found in pernicious anemia. If the iron index proves to be of definite value, as Murphy and his co-workers hope, in distinguishing between pernicious anemia and secondary anemia in most instances and in following the changes that may occur in the blood during treatment for anemia, the determination of iron may merit a more widespread application in clinical work today.

1. An outline of the earlier work will be found in the paper by Murphy, W. P.; Lynch, Ralph; and Howard, Isabel M.: The Value of Determinations of the Iron Content of Whole Blood, Arch. Int. Med. **47**: 883 (June) 1931.

2. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 3, New York, Macmillan Company, 1926.

GENESIS OF VITAMIN D IN THE BODY BY ULTRAVIOLET IRRADIATION

There is no longer any question about the potency of ultraviolet irradiation as well as sunlight in affording protection against or cure of rickets. The presumption is that somewhere and somehow the selective rays develop vitamin D or its equivalent, just as the antirachitic vitamin is formed by suitable irradiation of foods and most specifically of the organic substance ergosterol. There are at least two possibilities for the formation of vitamin D through direct irradiation of the surface of the body. The sebaceous material of the skin doubtless contains a substance susceptible to effective irradiation; at any rate "lanolin," the sebaceous lubricant of the skin and wool of sheep, can be rendered antirachitic by exposure to ultraviolet rays, as Hess, Weinstock and Helman [1] observed in 1925. There is evidence, too, that irradiated ergosterol-bearing sterol mixtures, if gently

1. Hess, A. F.; Weinstock, Mildred; and Helman, F. Dorothy: The Antirachitic Value of Irradiated Phytosterol and Cholesterol: I. J. Biol. Chem. **63**: 305 (March) 1925.

rubbed into the intact shaven skin, can protect rabbits on a rachitogenic diet from rickets.[2]

The suggestion of Hess that activation of sebaceous matter in the skin by sunlight and its subsequent absorption through the skin is a possible mode of antirachitic function has much in its support. It has been pointed out [2] that, although the amount of radiant energy required to activate sufficient of the precursor to provide an adequate supply of vitamin D is not known, it would appear to be small when of the appropriate wavelength; for daily exposure of one and one-half minutes to a mercury vapor quartz lamp is sufficient to prevent rickets in an albino rat, for the most part covered with fur, and fed on a rickets-producing diet.[3] It was observed by Chick and her co-workers that rickets in a child was healed when only the hand and forearm were exposed to ultraviolet irradiation. Hess and Unger [5] made a similar observation, but in this case the exposure was to the rays of the sun.

It has repeatedly been demonstrated in many laboratories that not more than 0.0001 mg. of irradiated ergosterol daily is required to protect a rat from rickets or even to cure it. Moreover, the amount of ultraviolet irradiation which reaches the surface of the rat is small, since, with the exception of the ears, feet and horny tail, the rest of the rat is covered with fur; yet it is enough to protect the rat from rickets. Such facts lend a possibility to the second method by which ultraviolet irradiation may be effective; namely, by penetration of the epidermis so as to reach ergosterol contained in the capillaries below. According to Lucas,[6] the epidermis on the parts of the human body other than the palms of the hands and soles of the feet is approximately 50 microns thick at the peaks of the dermis where the network of capillaries is thickest. Anderson and Macht [7] in this country have insisted that their measurements of the penetration of ultraviolet rays through living animal tissue have demonstrated the marked transmission of short rays. The experiments have been criticized by several investigators. The general thesis seems, however, to be substantiated by Lucas's measurements at the Lister Institute for Preventive Medicine in London; in fact, he regards the percentage of ultraviolet radiation of physiologically active wavelengths transmitted through the epidermis as higher than previously recorded. The possibility of reaching the blood directly by suitable irradiation may explain the observation that antirachitic potency can be developed in parts of the skin not directly exposed to the source of the rays.

2. Hume, Eleanor M.; Lucas, N. S., and Smith, Hannah H.: On the Absorption of Vitamin D from the Skin, Biochem. J. **21**: 362, 1927.
3. Hess, A. F.: Newer Aspects of the Rickets Problem, J. A. M. A. **78**: 1177 (April 22) 1922.
4. Chick and others: Medical Research Council Special Report Series 77, 1923.
5. Hess, A. F., and Unger, L. J.: The Cure of Infantile Rickets by Sunlight, J. A. M. A. **77**: 39 (July 2) 1921.
6. Lucas, N. S.: The Permeability of Human Epidermis to Ultraviolet Irradiation, Biochem. J. **25**: 57, 1931.
7. Macht, D. I.; Anderson, W. T., Jr., and Bell, F. K.: The Penetration of Ultraviolet Rays into Live Animal Tissues, J. A. M. A. **90**: 161 (Jan. 21) 1928. Anderson, W. T., Jr., and Macht, D. I.: Am. J. Physiol. **86**: 320 (Sept. 28) 1928.

ONCHOCERCIASIS

Filariasis remained a puzzling problem for many years until the nature of the parasites involved, their life histories, and the modes of transmission to man became better known. Filariated persons are found in large numbers in certain parts of the world, particularly in tropical regions. The filarial organisms occur in the body in both adult and larval forms, the latter being designated microfilariae. They are transmitted by insect vectors. Closely related to the familiar filariae are organisms belonging to the genus *Onchocerca*. They lead to the development of fibrous tumors, usually under the skin, in which the parasites are embedded. Some of the tumors are of long duration in man and, in some adults, are said to have been present since childhood. According to Chandler,[1] in some districts of Congo where *Filaria bancrofti* is said not to occur, practically all cases of elephantiasis are accompanied by infection with *Onchocerca volvulus*. Robles has described *Onchocerca coecutiens* causing subcutaneous nodules on the head.

At present a group of investigators under the leadership of R. P. Strong [2] of Harvard University is investigating the disease as it occurs in Guatemala. They have reported that the fibromatous tumors are of parasitic origin and that the adult male and female *Onchocerca coecutiens* are situated in the central portion of the tumor. They have been able to demonstrate that three species of *Eusimulium* flies are concerned in the transmission of the disease. All stages of development of *Onchocerca coecutiens* have been repeatedly observed in these flies, and the development has been traced from the time the fly just bites the infected individual and thus ingests the microfilariae from his skin, on through their passage and development in the thoracic muscles, head and proboscis. Strong asserts that, in some of the cases in which the tumors have existed for long periods, disturbances of the eyes and loss of vision occur. He has been able to demonstrate microfilariae in such cases in sections of the pericorneal conjunctiva, cornea and iris removed at operations or at necropsy. The continued presence and passage of the microfilariae through the lymphatics of the eye for long periods apparently give rise to an inflammatory condition and to a perivascular infiltration, in perhaps somewhat the same manner as occurs from the action of the trypanosome in the tissues of the central nervous system in trypanosomiasis. In the course of time, he adds, pericorneal conjunctivitis, keratitis and iritis may result in such cases.

According to the Harvard scientists, the tumors (and the adult parasites within them) can be easily removed by operation under a local anesthetic, but in some cases the microfilariae continue to circulate in the body and are demonstrable in the skin and in some cases in the

1. Chandler, A. C.: Animal Parasites and Human Disease, ed. 2, New York, John Wiley & Sons, Inc., 1922.
2. Strong, R. P.: Onchocerciasis in Guatemala, Science **73**: 593 (May 29) 1931.

eye for at least several years. The investigation of possible filaricidal substances is now in progress in Guatemala. The importance of the study is attested by the circumstance that the members of the Harvard expedition examined nearly 1,400 persons and removed tumors in 261 cases. The laboriousness of the underlying researches is indicated by the fact that nearly 5,000 flies were dissected and examined microscopically. Incident to this praiseworthy effort was the discovery that aside from the *Eusimulium* fly other insects, and particularly the once suspected culicine mosquitoes, are not concerned with the transmission of this onchocerciasis. Strong has pointed out that the mosquito has a considerably longer proboscis than the *Eusimulium* fly and evidently inserts the proboscis deep in sucking blood. The microfilariae of *Onchocerca*, which are not encountered naturally in the blood but are found in the lymphatics of the skin, are not even ingested by the mosquito when it is fed on infected individuals. Possibly also the saliva of the mosquito repels the microfilariae of *Onchocerca cecutiens*.

Current Comment

THE THEORY OF ENDEMIC GOITER

At present, endemic goiter is commonly classed as a deficiency disorder, the lacking factor being a sufficient supply of iodine. There is no doubt that the provision of this element can act as a prophylactic. The pioneer work of Marine and his collaborators in this country offered concrete evidence of the value of preventive treatment applied to children of school age in Ohio. In parts of Europe, goiter prophylaxis has been equally successful. Analyses have shown that, where the water supplies and local vegetables contain exceptionally little iodine, goiter is apt to be unusually prevalent. Despite these facts there are thoughtful physicians who still question whether there is not also some positive factor involved in the occurrence of goiter in so-called goitrous areas. The participation of microbiotic agents was postulated long ago. Recently Hellwig [1] has ventured to put the question to a test anew, taking the precaution of conducting his experiments in an environment free from endemic goiter; namely, Wichita, Kansas. There he failed to produce characteristic thyroid disturbance in animals fed diets poor in iodine, except when excess of calcium was supplied in the drinking water. Hellwig insists that a diet poor in iodine produces atrophy of the thyroid gland with a degree of severity in inverse proportion to the amount of iodine taken and in direct proportion to the length of time the feeding experiments are continued. He champions the view that endemic goiter cannot be explained as compensatory hypertrophy of the thyroid gland due to a low content of iodine in the food but rather that, in insufficiency of iodine, atrophy of the organ must be expected, since iodine is a strong stimulant to the action of the thyroid gland. The essential cause of goiter thus becomes a positive agent, associated with iodine deficiency. This harmonizes with the assertion that diets rich in calcium and, at the same time, low in iodine produce the most pronounced hyperplasias of the thyroid gland. There may be a diversity of positive factors interplaying to develop abnormalities. In any event an excess of iodine in the drinking water exerts an inhibitory action on hyperplasia of the thyroid gland, in spite of a high content of calcium. Hellwig summarizes the problem with the comment that the histologic structure of goiters varies according to the part of the country in which they occur. In certain regions, especially in level regions, the diffuse colloid goiter, with and without hyperthyroidism, and exophthalmic goiter predominate. In more mountainous countries the toxic goiter is an exception, and the nearer one approaches the center of the endemic area the less one encounters colloid goiter. It is replaced by the colloid-poor, diffuse parenchymatous goiter in childhood and by the adenomatous parenchymatous nodular goiter with its degenerative forms in adults. It can hardly be doubted, Hellwig concludes, that these differences in the architecture of the goiters are due to differences in the iodine content of the food, the positive etiologic factor, heretofore unknown, being the same and being world-wide. The current views that have found acceptance in this country need not yet be abandoned. The article just reviewed is a wholesome reminder that there still may be a number of debatable questions involved in what has seemed to many to be established hypotheses of thyroid maladjustments.

1. Hellwig, C. A.: Iodine Deficiency and Goiter, Arch. Path. **11**: 709 (May) 1931.

SPERM-AGGLUTINATING BACTERIA

About fifteen years ago, "mass coagulation" of the seminal fluid,[1] or a "real agglutination" of the spermatozoa,[2] was described by certain investigators and considered by them to be a potential factor in sterility. Since then sperm agglutination has been demonstrated with numerous dyestuffs, acids, alkalis, metallic salts, exudates and tissue extracts. Probably the most suggestive results, however, are those currently reported by a study of sperm agglutination by the normal or pathogenic bacterial flora of the genito-urinary tract. Rosenthal [3] of Zion Hospital, Brooklyn, found that while most micro-organisms isolated from this region, such as streptococci, staphylococci, pneumococci, gonococci, *B. typhosus, B. paratyphosus, B. proteus, B. pyocyaneus, B. subtilis* and *B. tuberculosis,* give negative results, certain strains of *B. coli* instantaneously agglutinate human sperm cells (condom specimens) and gradually immobilize them, the agglutinated clumps being easily seen with the naked eye. Dr. Rosenthal's tests were performed on glass slides, by mixing a drop of sperm suspension with a drop of broth culture. The agglutination reaction is apparently independent of the acidity or alkalinity of the medium and does not depend on extracellular bacterial products. Berkefeld filtrates are inactive. Repeatedly washed bacteria still retain their full agglutinating power, even heat-killed bacteria

1. Lillie, F. R.: Biol. Bull. **28**: 19, 1915.
2. Loeb, Leo: J. Exper. Zool. **17**: 126, 1914.
3. Rosenthal, L.: Proc. Soc. Exper. Biol. & Med. **28**: 827 (May) 1931.

(60 C., twenty-four hours) being fully active. It is of clinical significance that the presence of normal serum and presumably of serum exudates does not inhibit this new bacterial property. Aside from its clinical interest, the Rosenthal phenomenon offers an intriguing physicochemical puzzle as to how heat-killed, repeatedly washed bacteria are able to produce sperm agglutination.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 a. m. on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

August 10. **The Only Child.**
August 15. **The Cause and Prevention of Simple Goiter.**

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday, from 1 to 1:05 p. m., Chicago daylight saving time.

The program for the week is as follows:

August 10. **Pressing a Painful Point.**
August 12. **Physically Fit.**
August 13. **Boots and Saddles.**
August 15. **Can They Swim?**

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARIZONA

Study of Cancer in Navajo Indians.—A study of the incidence of cancer in Navajo Indians is in progress at Sage Memorial Hospital, Ganado, under the direction of Dr. Clarence G. Salsbury, superintendent. The research program has been undertaken in order to determine the truth of an assertion that this tribe is nearly free from cancer.

CALIFORNIA

Diphtheria Rate Reduced.—Diphtheria caused 1.55 deaths per hundred thousand of population in Los Angeles County during 1930, a rate that is one-third the usual expectancy in the United States as a whole, the annual health report of the county shows. This reduction has been achieved in the past five years, during which an active immunization campaign has resulted in the protection of 74,000 persons. There are now three cases of diphtheria per hundred cases of communicable disease, compared to 6.79 cases in 1925.

Outbreak of Typhoid at Isleton.—Ten cases of typhoid occurred in a group of workers employed near Isleton, according to a recent bulletin of the state department of public health. The water supplied at the place where the employees worked was taken from the river and filtered, but in the places where the employees lived untreated water from Sacramento River was used. Most of the ten persons had returned to their homes in Sacramento, Oakland, Mountain View and San Francisco before signs of illness appeared. An investigation of sanitary conditions in Isleton and vicinity was made and an emergency chlorination outfit was installed.

Social Hygiene Council Organized.—At a meeting, June 10, in Los Angeles, twenty representatives of southern California health, social and educational organizations voted to establish a social hygiene council. This group constituted itself a temporary committee on organization and membership. Paul Popenoe, director, Institute of Family Relations, was elected chairman, and Dr. Harold Morrison of the Los Angeles Board of Education, secretary. The council will be known as the Social Hygiene Council of Southern California and will function as a central coordinating, advisory and promoting body. The first work of the organization and membership committee will be to add to the council's number, after which permanent officers will be elected and committees appointed to undertake a practical program.

Decisions of State Board of Examiners.—At a meeting of the California State Board of Medical Examiners in San Francisco, July 6-9, the following cases were disposed of in the manner indicated:

LICENSES REVOKED

Dr. David M. Angus, Seattle, July 7, on a record of his conviction for an alleged illegal operation.
Dr. Schuyler A. Barber, Porterville, July 8, on narcotic charges. He is at present serving an eight months' jail sentence for this violation.
Dr. Philip William Dyment, Pasadena, July 7, on a record of revocation of his Georgia medical certificate.
Dr. William C. Fiske, Hermosa Beach, July 7, subsequent to a manslaughter charge to which he pleaded guilty after the death of a young woman following an illegal operation.
Dr. Ralph H. Newcomb, Upper Lake, July 8, for violation of the terms of his probation.
Dr. Asa F. Speicher, Los Angeles, July 8, for alleged narcotic derelictions.
Dr. David A. Stevens, Wilmar, July 9, on his conviction for two alleged statutory offenses.
Dr. Ernest Darrington Weaver, Los Angeles, July 9, as a result of his conviction on a narcotic charge.

LICENSES RESTORED

Dr. Ernest R. Hoffman, Menlo Park, July 6. His license had been revoked, Oct. 19, 1920, for violation of the espionage act.
Dr. Robert H. MacLauchlan, San Francisco, July 9. His license had been suspended, Oct. 22, 1930, for aiding and abetting an unlicensed practitioner. He will remain on probation for three years.

The board suspended the licenses of Drs. Cecil R. Drader, Greenville, and Orient C. Higgins, Porterville, for one year each, beginning July 8, on narcotic charges. The certificate of Dr. Christopher Howson, Oakland, was suspended on the same date, for one year, for aiding and abetting an unlicensed practitioner. Probation without narcotic privileges was granted to Drs. Fay E. Cramer, Hawthorne, and Dagmar Petersen, Selma, for five years, beginning July 7 and 8, respectively. The probation of Dr. Clarke S. Smith, Oakland, was modified, July 9, to include alcohol and narcotic privileges. The probation of Dr. George H. Wymann, Los Angeles, was modified, July 6, to include alcohol privileges.

CONNECTICUT

Society News.—Dr. Wendell J. Stainsby, New York, spoke on "Rheumatoid Arthritis" before the New Haven Medical Association, June 3. Speakers before other recent meetings were Drs. Walter C. Alvarez, Rochester, Minn., on "Present-Day Problems in Gastro-Enterology" and Walter E. Lee, Philadelphia, on "Postoperative Pneumonia."

State Doubles Amount of Tetanus Antitoxin Furnished.—In view of recent experiences in which tetanus has developed in spite of the administration of prophylactic doses of tetanus antitoxin, the Connecticut department of health is now furnishing to physicians a package containing 3,000 units instead of the 1,500 units heretofore used. The package for therapeutic use has also been doubled, containing now 10,000 units. It is believed that the administration of a prophylactic dose of 3,000 units may produce a 25 per cent greater immunity than the 1,500 unit dose.

Clinical Congress of State Medical Society.—The seventh clinical congress of the Connecticut State Medical Society will be held in the Sterling Hall of Medicine, Yale University, and the New Haven Hospital, September 22-24. Among the subjects to be discussed are diseases of the digestive tract, diphtheria, treatment of fractures, maternal health and the cost of illness. Morning sessions will be devoted to presentation of papers and discussion, afternoon sessions to laboratory demonstration of the same subjects, and evening dinner meetings to addresses by authorities on subjects of general interest. Dr. Linsly R. Williams, director, New York Academy of Medicine, will address the dinner meeting, September 22, on "Fundamental Conditions in Medical Economics," and, the following evening, Dr. Theodore T. Zuck of the Maternal Health Association, Cleveland, will speak on "Maternal Health in Relation to Race Betterment." Among those on the program are Drs. Daniel F. Jones, associate in surgery, Harvard University Medical School; William H. Park, director of laboratories, New York City Department of Health; Stanley H. Osborn, state health commissioner of Connecticut, and Robert L. Dickinson, secretary of the National Committee of Maternal Health. The clinical congress was organized by the state medical society as an educational agency for practicing physicians. Dr. Creighton Barker, 129 Whitney Avenue, New Haven, is in charge of registration and publicity; all inquiries should be made to him.

ILLINOIS

Free Toxoid for Diphtheria Prevention.—Toxoid may now be had from the state department of public health instead of toxin-antitoxin for immunizing children against diphtheria. The department will continue to provide toxin-antitoxin to those who prefer this product.

Health Exhibit at State Fair.—A series of scientific units dealing with specific diseases will be constructed through the cooperation of the University of Illinois College of Medicine with the state department of health as a feature of the health exhibit at the Illinois State Fair, August 22-29, at Springfield. The subjects covered include tuberculosis, cancer, heart disease, diphtheria, pneumonia, typhoid fever and animal experimentation. Booths will be devoted to home and community sanitation, to milk, water, waste disposal, nutrition, ventilation, social hygiene and similar subjects. The state department of health will also provide facilities for the physical examinations of babies and for the superficial medical examination of adults.

Impostor Fox Again.—A letter from Dr. O. F. Maxon of Springfield states that George A. Fox, who has posed as a graduate of Rush Medical College and has at various times swindled physicians and pharmacists, is, as Dr. Maxon says, "still working his game" and was last seen in Springfield, July 18. THE JOURNAL has published a number of news items, ranging from 1925 on, warning the profession against Fox. Fox sometimes gives his name as George A., sometimes as Alec, and occasionally as "Dr. Philip." He usually claims to be a Milwaukee physician or, at any rate, to hail from some point in Wisconsin. It appears that Fox did attend Rush Medical College for one year, several years ago, but was never graduated. He calls on physicians, usually graduates of Rush, and asks them to cash or to endorse checks, which come back marked "No Account." Occasionally, he raises the check after it has been endorsed. One of his stories is that he is traveling by automobile with his family and his car broke down some miles from the town he is "working," and he does not have the money to pay the towing bill. He then requests a loan sufficient to get the car (which is nonexistent) and promises to stay in the town until he can get money from home. He always fades from the picture, however, as soon as he gets cash or negotiable paper.

Undulant Fever Committee Organized.—A state committee has been appointed by the state department of public health to combat the increasing prevalence of undulant fever. At its first meeting in Springfield, July 21, the committee authorized the appointment of subcommittees of three members each to represent the medical profession, cattle and swine breeders, milk distributors, dairymen, poultry and goat raisers, veterinarians and meat packers. The general committee will develop a practical program for the control of undulant fever in man and beast. The subcommittees will collect all available information relating to undulant fever from the point of view of the industry or profession represented and to suggest activities that would be practicable from the same standpoint; they will also constitute a medium for extending educational activities to the groups represented. The first case of undulant fever in man reported in the state was in 1928. In 1929 and 1930 there were, respectively, eighteen and sixty-three cases reported, while the first half of 1931 yielded seventy-seven cases. Deaths of six persons were attributed to undulant fever in Illinois during 1930. The members of the committee include Dr. Andy Hall, state health director, chairman; Robert Graham, D.V.M., professor of animal pathology and hygiene, University of Illinois, Urbana, vice chairman; Dr. John J. McShane, state epidemiologist, secretary; Dr. Lloyd L. Arnold, professor of bacteriology and preventive medicine, University of Illinois College of Medicine; Dr. Hubert Houston, assistant state epidemiologist; Howard J. Shaughnessy, Ph.D., chief state bacteriologist; Dr. Randolph O. Stites, practicing physician, Industry, and William H. Welch, D.V.S., state veterinarian.

IOWA

Personal.—Dr. Watson W. Beam, Rolfe, who has served as councilor for the eleventh district of the state medical society since 1916, completed fifty years in the practice of medicine, May 31.

Society News.—The Austin Flint-Cedar Valley Medical Society held its midsummer meeting, July 15; among the speakers were Drs. John L. Kestel, Waterloo, on "Diagnostic Methods of Kidney Disorders"; William W. Bowen, Fort Dodge, "Enterostomy as a Life Saving Measure," and Fred L. Knowles, Fort Dodge, "Flat Feet in Children." Dr. Channing G. Smith, president of the state medical society, was among the honored guests at the banquet in the evening.——The Upper Des Moines Medical Society was addressed at Arnolds Park, July 9, among others, by the following Rochester, Minn., physicians: Paul A. O'Leary, "Treatment of Syphilis in General Practice"; Samuel F. Haines, "Medical Management of Goiter"; Virgil S. Counsellor, "Injection Treatment of Varicose Veins," and Dr. Ernest M. Hammes, St. Paul, "Diagnosis of Functional Neurological Diseases."

KANSAS

Licenses Revoked.—At a meeting of the state board of medical registration and examination, June 16-17, the licenses of Drs. Seth A. Brainard, Coffeyville, and William H. McLeod, Kansas City, were revoked.

Personal.—Dr. John F. Barr was recently appointed health officer of Franklin County to succeed Dr. George W. Davis, whose term expired.——Dr. Solomon T. Shelly observed the fiftieth anniversary of his practice in Mulvane, May 4.

MISSOURI

Study of Effect of Dust on Respiratory Tract.—The department of otolaryngology of Washington University School of Medicine, St. Louis, is studying the effect of dust and deleterious gases in the air on the nasal sinuses and other structures in the respiratory tract. The experiment is being carried out under the supervision of Dr. Lee W. Dean, director of otolaryngologic research in the Oscar Johnson Research Institute. Monkeys will be raised in air that has been purified by the removal of dust and deleterious gases, and other monkeys will be raised breathing the ordinary air of St. Louis. Antemortem and postmortem observations will be made on all animals studied.

NEW HAMPSHIRE

New Milk Inspection Code.—An annual health certificate for all employees of pasteurization and other milk plants is a feature of the new dairy inspection code now in effect as a result of the adoption of a set of regulations by the state board of health, June 9. These regulations are pursuant to the provisions of the milk pasteurization law, which empowers the state board of health to make rules "governing the pasteurization, or other processing for the same purpose of milk, skimmed milk and cream, and concerning the production, distribution, labeling and sale of products so treated and to be so treated." According to the state board of health, in this connection the rules relative to the production of milk and cream, promulgated as regulation 15 of the sanitary food law, have been revised and extended, these now following closely the code of the New England milk inspectors, also the so-called standard ordinance as originally drawn up by the U. S. Public Health Service and now in effect in a considerable number of the states.

Organize State Cancer Commission.—A bill, recently passed by the New Hampshire legislature and signed by the governor, provides for state aid for persons suffering from cancer and for the creation and appointment of a cancer commission. This commission will consist of the governor, as an ex officio member, and four others to be appointed by him with the advice of the council, one of whom shall be a member of the state board of health, one a member of the state medical society, and the two remaining members nonmedical. The commission is to establish, organize and conduct cancer clinics throughout the state and may authorize the expenditure of state funds for the support of clinics conducted by other agencies; it may furnish clinical care for indigent patients at the expense of the state. It is authorized to receive voluntary contributions and gifts. Fifteen thousand dollars was appropriated for the fiscal year ending June, 1932, and $25,000 for the fiscal year ending June 30, 1933. The cancer death rate in New Hampshire in 1929 was 133.9 per hundred thousand of population; 10 per cent of all deaths in the state were said to be due to this disease.

NEW YORK

Poisonous Metal Polishes Forbidden.—At a meeting of the Public Health Council at Saratoga Springs, June 30, regulation 18 of chapter VIII of the sanitary code was amended, effective immediately, prohibiting the sale or offering for sale of poisonous substances for polishing kitchenware or silverware. Regulation 18 shall now read:

No polish or article or substance containing any cyanide preparation or other poison shall be offered for sale when such sale is obviously or presumably for the cleaning of nickel, copper, silverware or silver plated ware or other articles or utensils used for the service or preparation of food or foodstuffs in any hotel, club, restaurant, public institution or public eating place.

No polish or article or substance containing any cyanide preparation or other poison shall be used for the cleaning of nickel, copper, silverware or silver plated ware or other articles or utensils used for the service or preparation of food or foodstuffs in any hotel, club, restaurant, public institution or public eating place.

Health Survey of Albany Completed.—The state department of health recently completed a public health survey of Albany the purpose of which is to assist in the development of a modern and adequate municipal health program. The work was under the direction of Dr. Huntington Williams, secretary of the department. The establishment of a department of health separate from the department of public safety was recommended. As is required by a recently enacted state law for cities of more than 50,000 population, Albany will have a full time city health officer. It was further recommended, among other things, that there be a general revision of the city ordinances and rules and regulations relating to health; establishment of an Albany council of health agencies to coordinate official and unofficial health activities of the city, and an increase in the appropriations for the health department to make possible an adequate volume and improved quality of department work and the organization of a maternal and child health program.

Septic Sore Throat at Walton.—Of the 444 cases of septic sore throat brought to light in a house to house canvass following an outbreak at Walton, Delaware County, 112 were reported by physicians. There were seven deaths. The final report shows that a few cases apparently undiagnosed occurred in February and early in March, but the actual outbreak did not begin until March 24, the peak being reached, April 7. The last known case occurred May 19. Three hundred and eighty of the persons affected used milk delivered to their homes by a local dealer. In twenty-one additional cases the milk was partaken of at a local restaurant supplied by this dealer. The remaining forty-three are not known to have used milk furnished by this man, but it was said that a number of these could be shown to have had opportunity for contracting the disease by contact. On a dairy farm supplying this dealer, a cow was found with a discharging quarter which had become infected shortly after the cow freshened, about February 1, according to *Health News*. An investigation did not disclose a human source of infection. Specimens of the discharge from the injured quarter were found to contain hemolytic streptococci showing the same morphologic and cultural characteristics as those demonstrated in cultures taken from the throats of the patients in the village. At a meeting of the village board, May 18, an amendment to the village sanitary code was adopted prohibiting the sale of raw milk.

New York City.

Outbreak of Infantile Paralysis.—Seventy-one new cases of infantile paralysis, the highest daily total since the outbreak of the disease, were reported to the health department, July 31; according to newspapers, this number is equal to the total for the entire year 1929. Fifty-four new cases are said to have been reported, July 29, and fifty-six, July 28. According to press reports, the total this year is the largest number since 1916, when there was an epidemic with 9,023 cases. Fifty-nine cases were reported, August 1, and fifty-five August 2. These figures are said to have brought the total number of cases since January 1 to 836; of this number 802 were reported since July 1. Brooklyn, where the current outbreak seems to have centered, reported forty-one new cases, July 31, the highest daily total for that borough since the onset.

Tuberculosis Clinic for Waterfront District.—A tuberculosis clinic to serve the waterfront district was opened, August 3, at Broad Street Hospital in cooperation with the city department of health. The population of this district is largely transient, its principal element being seamen from all parts of the world. This part of the city is said to have the highest death rate in Manhattan. All services of the hospital will be at the disposal of the clinical staff and arrangements are to be made to care for patients during the period before their transfer to sanatoriums. Dr. James S. Edlin will be in charge of the clinic, which is to be open on Mondays and Wednesdays from 10 a. m. to noon for adults and during the same hours on Fridays for children. This is the third clinic of its kind to be established by the health department in conjunction with an established hospital.

NORTH CAROLINA

Lectures for Ambulance Drivers.—A plan to lessen the loss of life and to aid accident victims was provided for in a resolution adopted by the Mecklenburg County Medical Society at a recent meeting, it is reported. At the request of the society Dr. John S. Gaul will deliver before the ambulance drivers of Charlotte lectures designed to instruct in first aid work, including the application of splints to broken and fractured limbs, use of respirators and other emergency measures of hospitalization, according to the program outlined.

University News.—Dr. Francis Bayard Carter was appointed professor of obstetrics and gynecology, and Dr. Edwin C. Hamblen, associate professor of obstetrics and gynecology, at Duke University School of Medicine, effective July 1. In addition there were added to the staff one resident, two assistant residents, nine interns and one fellow. July 20 marked the close of Duke Hospital's first year of operation, during which time 3,417 patients were admitted, 1,439 operations were performed and about 2,972 patients were treated in the outpatient department.

Pediatric Clinic.—A week of graduate work in pediatrics was offered to physicians of western North Carolina, July 13-18, at the Davis Hospital, Statesville, under the direction of Dr. George W. Kutscher, Jr., Asheville. Among the subjects covered in daily clinics were intracranial hemorrhage, acute diarrheas, diseases of the eye, ear and throat, surgical conditions and enlarged thymus glands. In addition to Dr. Kutscher, Drs. David S. Asbill, Lloyd R. Shaw, James W. Davis, Claude W. Ashburn, all of Statesville, and Frank Howard Richardson, Black Mountain, participated in the demonstrations.

PENNSYLVANIA

Society News.—Dr. Joseph S. Brown presented a paper on splenomegaly at the June meeting of the Mifflin County Medical Society, Lewistown.——Dr. Jesse O. Arnold, Philadelphia, addressed the Harrisburg Academy of Medicine, June 16, on "Some Later Concepts on the Cause and Treatment of Eclampsia"; he gave an illustrated address before the York County Medical Society, June 20, on "Water Balance in the Prevention and Treatment of Eclampsia," and addressed the Montgomery County Medical Society, Norristown, June 3, on "New Light on Old Problems of Eclampsia." A symposium on schizophrenia and encephalography will feature the September 2 meeting of the Montgomery County Medical Society.

Philadelphia

Tuberculosis Examination of School Children.—The Philadelphia Health Council and Tuberculosis Committee has offered to finance tuberculosis examinations and a demonstration of methods among school children over a three year period, it is reported. The council, in its proposal to the board of education, estimated that 4,000 children could be examined annually by the funds it will make available. Revenues from the sale of Christmas seals will also be applied to this purpose, it is said. This work, which will be inaugurated September 1, it is reported, is planned as a joint project of the division of medical inspection of the board of education, the Henry Phipps Institute and the health council, and is said to be a continuation of the work started three years ago by the Phipps Institute; however, these funds were exhausted. It was pointed out that the personnel engaged in the demonstration and examinations will be members of the health council, but the physicians and nurses will be under the direction of Dr. Walter S. Cornell, chief of the division of school medical inspection.

SOUTH CAROLINA

Society News.—Drs. Edgar F. Fincher, Jr., and William A. Smith, Atlanta, Ga., addressed the Greenville County Medical Society, Greenville, July 7, on intracranial neoplasms, from the medical and surgical points of view, respectively.——Dr. Lee W. Milford addressed the Anderson County Medical Society, Anderson, July 13, on meningitis.

VIRGINIA

Health at Richmond.—Telegraphic reports to the U. S. Department of Commerce from eighty-two cities with a population of about 36 million, for the week ended July 25, indicate that the highest mortality rate (17) appears for Richmond, and the rate for the group of cities as a whole, 10.3. The mortality rate for Richmond for the corresponding period last year was 20.5, and for the group of cities, 11.9. The annual rate for eighty-two cities was 12.7 for the thirty weeks of 1931, as against a rate of 12.6 for the corresponding weeks of 1930. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits, or that they have a large Negro population may tend to increase the death rate.

WISCONSIN

Personal.—Dr. Eben J. Carey, Milwaukee, has been appointed director of medical exhibits for the Century of Progress Exposition in Chicago in 1933.——Dr. William L. Herner, Milwaukee, has been appointed medical director of the Sacred Heart Sanitarium, succeeding Dr. Stephen S. Stack, resigned.

State Medical Meeting at Madison, September 9-11.—The ninetieth annual meeting of the State Medical Society of Wisconsin will be held, September 9-11, at Madison, under the presidency of Dr. Cornelius A. Harper, Madison. Guest speakers will include Drs. Jennings C. Litzenberg, Minneapolis, on "Delivery of Occiput Posterior"; H. Earle Conwell, Birmingham, Ala., "Fractures of the Spinal Vertebrae Without Cord Injury"; Roy D. McClure, Detroit, "Result of the Use of Iodine Salt in Detroit as Noted in the Effect on the Demand for Surgery"; Harry B. Culver, Chicago, "Significance of Renal Pain"; Arthur H. Curtis, Chicago, "Stricture of the Uterine Cervix"; Herman O. McPheeters, Minneapolis, "Mechanics of the Reverse Flow of Blood in Varicose Veins and Its Clinical Application to the Injection Treatment"; Howard L. Beye, Iowa City, "Transphrenic Infections"; Joseph C. Bloodgood, Baltimore, "Control of Cancer Through Education"; Samuel J. Fogelson, Chicago, "Present Status of the Mucin Treatment in Peptic Ulcer"; the following physicians from Rochester, Minn.: William F. Braasch, "Urology and the General Practitioner"; Hermon C. Bumpus, Jr., "Punch Prostatectomy"; Charles W. Mayo, "Pharyngoesophageal Diverticulum"; Melvin S. Henderson, "Fractures of the Lower Extremities"; George B. Eusterman, "Carcinomatous Gastric Lesions Masquerading as Benign Ulcer"; Fred W. Rankin, "Encouragements in the Surgical Treatment of Cancer of the Colon and Rectum"; William L. Benedict, "Infections of the Pelvic Organs of the Female in Relationship to Diseases of the Eye," and Gordon B. New, "Developments in the Treatment of Deformities of the Face and Neck."

GENERAL

Society News.—At the recent annual meeting of the American Dermatological Association, Dr. William H. Mook, St. Louis, was elected president, and Dr. William H. Guy, Pittsburgh, was reelected secretary. The next annual session will be held at Havana, Cuba.——Dr. T. Rosa H. Gantt, Spartanburg, S. C., was installed as president of the Medical Women's National Association at its recent annual meeting, and Dr. Esther C. P. Lovejoy, New York, was made president-elect. Dr. Sylvia Allen, Rock Hill, S. C., was elected secretary. The next annual session will be held at New Orleans. ——The American Association of Obstetricians, Gynecologists and Abdominal Surgeons will hold its next annual meeting at White Sulphur Springs, W. Va., September 14-16.—— Drs. Francisco Maria Fernandez and Jose Lopez Silvero, both of Havana, Cuba, were reelected president and secretary, respectively, of the Pan-American Medical Association at its meeting, July 26-31, in Mexico City. Dr. Aristides Agramonte, New Orleans, was chosen chairman of the next congress, which is to be held in New Orleans in 1932.——Dr. George W. Swift, Seattle, was installed as president of the Pacific Northwest Medical Association at its annual meeting in Seattle, June 27; Dr. Bertram D. Gillies, Vancouver, B. C., was made president-elect, and Dr. Frederick Epplen, Seattle, secretary, reelected.

International Studies on Public Health.—The Milbank Memorial Fund is conducting a survey of several European countries to learn and evaluate the manner in which they have attempted to solve their medical service problems. The international studies on the relation between the private and official practice of medicine as related to the prevention of disease is under the direction of Sir Arthur Newsholme. The first section of his report appears as the first of four volumes to be published. The purpose of these studies may be described as follows: to make an objective study of European methods of public health and of established relationships there and to devise from such impartial study a philosophy applicable to American conditions with the aim of ascertaining which measures work for the greatest public good, and whether new measures emerge as possibilities; of utilizing methods not unfriendly to the interest of the medical profession, and of discovering how the services of the private physician may best be utilized in public health. As planned, the studies will be presented in four volumes: volume I to include data as ascertained by a survey of The Netherlands, Scandinavia, Germany, Austria, Belgium and Switzerland; volume II covers France, Italy, Jugoslavia, Hungary and Czechoslovakia; volume III covers England and Wales, Scotland and Ireland, and volume IV, the concluding one, summarizes the subject and presents the study of the problems underlying the practice of preventive and clinical medicine. Suggestions as to progress will also be made. The subjects for discussion include the care of the poor, sickness and accident insurance, hospital organization, treatment of various diseases, organization of the medical profession, child welfare and school medical work, vital statistics and method of medical remuneration.

Government Services

Appointments in Regular Army

No new appointments shall be made in the promotion list branches in the regular army until the issue of further instructions, according to a recent announcement from the war department. This action is in view of the necessity of keeping the yearly average commissioned strength within the limits prescribed in the appropriation act for the fiscal year 1932. It was also announced that the following vacancies which existed on July 1 and for which there were qualified candidates on that date be filled at once: medical corps, 17; dental corps, 1, veterinary corps, 1; medical administrative corps, 3, and chaplains, 3. When these appointments have been made, further appointments in the nonpromotion list services will be suspended until further orders, as will all examinations for new appointments.

Change of Station in the Navy

Lieut. George A. Cann, from the Naval Station, Guam, to the Receiving Ship, San Francisco; Lieut. Carl H. McMillan, from Destroyer Division 7, Scouting Force, to the Naval Medical School, Washington, D. C.; Lieut. Tilden I. Moe, from the U. S. S. *Utah* to the Naval Medical School, Washington, D. C.; Lieut. Homer C. Pearson, from the Naval Medical School, Washington, D. C., to the Destroyer Division 28, Scouting Force; Lieut. James W. Shumate, from the Naval Medical School, Washington, D. C., to Destroyer Division 7, Scouting Force; Lieut. Otto W. Wickstrom, from the Naval Medical School, Washington, D. C., to the Destroyer Division 2, Scouting Force; Lieuts. John L. Cardwell and Arthur J. Horton, resigned, effective July 31; Lieut. William A. Deckert, resigned, effective July 28; Lieut. Francis D. Walker, from the Naval Training Station, Hampton Roads, Va., to the U. S. S. *Antares;* Comdr. William E. Eaton, from the bureau of medicine and surgery to the U. S. S. *New York;* Lieut. Comdr. Robert Bartie Miller, from the Navy Recruiting Station, New York, to the U. S. S. *Raleigh;* Lieut. Samuel E. Johnson, from the U. S. S. *Pittsburgh* to the Naval Medical School, Washington, D. C.

The Government Needs a Physician

The U. S. Civil Service Commission announces an open competitive examination for the position of physician (cancer). Applications must be on file with the commission at Washington, D. C., not later than September 4. The examination is to fill a vacancy in the veterans' administration, for duty at Hines, Ill. The entrance salary is $3,800 a year. Competitors will be rated on their education, training and experience. Applicants must have been graduated from a grade A medical school within twenty years of the date of the close of receipt of applications, and must have had at least three years of graduate experience in the practice of medicine, including at least one year in the diagnosis and treatment of malignant diseases, involving the use of radium and radium emanation, the histopathology of tumors and clinical or laboratory research. Full information may be obtained from the secretary of the U. S. Civil Service Board of Examiners at the postoffice or customhouse in any city or from the U. S. Civil Service Commission, Washington, D. C.

Portrait of General Ireland

The unveiling of a portrait of Maj. Gen. Merritte W. Ireland was a feature of the farewell reception given to him and Mrs. Ireland, May 29, at the Red Cross House, Army Medical Center, on his retirement as surgeon general of the U. S. Army. The portrait, which is the work of Thomas C. Corner, Baltimore, will hang in the administrative offices of the building now being completed for the Army Medical School, the dental, veterinary and nursing schools.

Extension Courses in Aviation Medicine

Two extension courses of four months each will be offered at the School of Aviation Medicine, Brooks Field, Texas, beginning about January 5 and May 5, respectively. The three months' course of instruction which was to have begun August 5 at the school, will be omitted. This period will be used by the faculty in research work, revision of schedules and programs to meet the requirement imposed by the proposed extension of the course of instruction to four months. Reserve and

national guard officers who successfully complete the extension course will be considered for assignment to active duty for practical training for a month or six weeks to complete the training requirements necessary to qualify as flight surgeons. Officers of the reserve corps not over 34 years of age are eligible for enrolment. The subjects to be studied in the course are ophthalmology and otology, aviation medicine, cardiology, physiology, administration, psychology (including personality study), neuropsychiatry, psychoneurosis and neurology and the psychoses.

Army Hospitals to Have Radios

The war department recently approved plans to install radio receiving equipment in 105 army hospitals in the United States, Panama, Hawaii, Porto Rico and the Philippine Islands. The installation is to be completed in 1935. According to *Military Surgeon*, present plans provide for a central receiving set in each hospital, with electric cables to each bed. By this means programs will be sent to the individual patients, who will be provided with head sets or "radio pillows." These "pillows" consist of a small receiver encased in a sponge rubber cushion with an outlet to permit of undisturbed reception. Individual volume control devices will be installed for each patient.

Changes in U. S. Veterans' Bureau Personnel

The July U. S. Veterans' Bureau Medical Bulletin notes the following recent changes in veterans' bureau personnel:

HOSPITALS

Dr. Nathaniel H. Badaines, to Rutland Heights, Mass.
Dr. Mitchell M. Benedict, to Veterans' Administration, Newington, Conn.
Dr. John F. Bresnahan, to Veterans' Administration, Lincoln, Neb.
Dr. George D. Brand, appointed at Veterans' Administration, Minneapolis.
Dr. Edward J. Brett, to Rutland Heights.
Dr. Harvey M. Cleckley, to Augusta, Ga.
Dr. Max Climan, appointed at Veterans' Administration, Newington.
Dr. Thomas P. Crane, to Jefferson Barracks, Mo.
Dr. Miles F. Daubenheyer, to North Chicago, Ill.
Dr. Richard G. Eaton, to Veterans' Administration, Lincoln.
Dr. Joseph I. Fitzsimmons, to Veterans' Administration, Lincoln.
Dr. Robert M. Fulwider, to Fort Lyon, Colo.
Dr. George M. Gehringer, reinstated at Veterans' Administration, Newington.
Dr. Carey L. Harrington, appointed at Castle Point, N. Y.
Dr. Richard L. Harris, promoted to clinical director, Augusta.
Dr. James E. Keirans, promoted to physician at Northampton, Mass.
Dr. Howard B. Kellogg, appointed associate physician at Veterans' Administration, Hines, Ill.
Dr. Henry J. Kellum, to Fort Lyon.
Dr. Ephraim Korol, to Veterans' Administration, Lincoln.
Dr. Morris H. Litman, to Veterans' Administration, Minneapolis.
Dr. Norman C. Mace, to American Lake, Wash.
Dr. Martin L. Minthorn, to Veterans' Administration, Lincoln.
Dr. Millard T. Nelsen, reappointed at American Lake.
Dr. Benjamin B. Parish, to Outwood, Ky.
Dr. Fritz R. Pearson, appointed at Veterans' Administration, Minneapolis.
Dr. Warren M. Pettengill, reinstated at Castle Point.
Dr. Ernest D. Pillsbury, to Sunmount, N. Y.
Dr. Ernest C. Reed, appointed permanently at Veterans' Administration, Hines.
Dr. Harry P. Reid, to Fort Bayard, N. M.
Dr. George N. Ruhberg, appointed at Veterans' Administration, Minneapolis.
Dr. Frank W. Scott, to Veterans' Administration, Lincoln, as regional medical officer.
Dr. Gerald J. Shuell, reinstated at Veterans' Administration, Lincoln.
Dr. Bayard Sullivan, to Livermore, Calif.
Dr. Joseph Taymor, appointed associate physician at Veterans' Administration, Hines.
Dr. Rudolph H. Wald, appointed at Veterans' Administration, Minneapolis.
Dr. Frank W. Whitmore, appointed at Veterans' Administration, Minneapolis.
Dr. Edwin E. Ziegler, to Coatesville, Pa.
Dr. Edward F. Zimmerman, to Muskogee, Okla.

REGIONAL OFFICES

Dr. Harold T. Allison, appointed at Scranton, Pa.
Dr. Abner J. Barnett, appointed at Los Angeles.
Dr. Henry A. Brady, to New Orleans.
Dr. Guy E. Campbell, appointed at central office.
Dr. Isaac F. Clark, resigned at Des Moines, Iowa.
Dr. Carolan S. Cronin, resigned at San Francisco.
Dr. Robert J. Flynn, resigned at Scranton.
Dr. Gordon L. Groover, Jr., appointed at central office.
Dr. Ivan E. Hix, resigned at Denver.
Dr. Lee K. Mayfield, to Birmingham, Ala.
Dr. Wilton G. Pitts, to Louisville, Ky.
Dr. Nathaniel E. Roberts, to Pittsburgh.
Dr. Harold W. Sterling, appointed at Cleveland.
Dr. Charles Stewart, appointed at Los Angeles.
Dr. Richard A. Williams, appointed at New York.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 4, 1931.

Population Problems

The second general assembly of the International Union for the Scientific Investigation of Population Problems has been held in London. It was attended by representatives of Argentina, Belgium, Denmark, France, Germany, Netherlands, Sweden and the United States. The results of the meeting have been so satisfactory to its organizers that they believe that the union is destined to play a great part in the elucidation of problems which already are felt in many countries to be of supreme importance. In an address the retiring president, Raymond Pearl of Baltimore, said: "It requires no expert to perceive that the growing hordes of people on the face of the earth are constantly and increasingly adding to the economic and social difficulties of an already sufficiently harrassed world." The problems arising out of the sensational fall in the birth rate in the United States and in western Europe, and those connected with migration, together with their growing influence on political action throughout the world, are alone sufficient to justify the existence of an international union by which the experience of one country can be placed at the disposal of others and the researches in each pooled for the benefit of all." During the short interval since the foundation of the union at Paris in September, 1928, it has from its limited funds financed commissions on population and food supply, differential fertility, sterility, fecundity, and the vital statistics of primitive races. It is in the United States, where interest is keenest in these questions, that both individuals and scientific organizations have been most liberal in providing funds for research. Great Britain is confronted by such problems as whether serious overpopulation exists at home and its possible connection with unemployment and economic depression.

The New Census of England and Wales

The preliminary report on the census of England and Wales, which was taken this year, is an important document which raises a momentous issue. The total population is 39,947,931, consisting of 19,138,844 males and 20,809,087 females, which shows a large preponderance of females, amounting to 1,670,243. The total is the largest recorded in this country and gives a density of 685 persons per square mile, the greatest in the world, with the possible exception of Belgium, and more than double that of most other countries. This density of population has been a characteristic of this country for several decades and, because it is not novel, is apt to have its importance overlooked and its bearing on population problems neglected. The 1931 total shows an increase on that of the last census (of 1921) amounting to 2,061,232, a decennial increase of 5.52 per cent, less than that of any decennium since 1861 (when the population was half the present) with the sole exception of the war decade. The 1921-1931 intercensal increase may be resolved into its more important elements as follows:

		Thousands
Increase—		
Births in England and Wales	(+)	6,930
Decrease—		
Deaths in England and Wales	(—)	4,692
Remainder, representing the excess of emigration over immigration (all types)	(—)	177
Net intercensal increase	(+)	2,061

PRESENT BIRTH RATE INSUFFICIENT TO MAINTAIN THE POPULATION

The lowness of the latest increase of population is wholly due to the enormous reduction in the number of births, although marriage rates have been well maintained, particularly at the younger ages, at which the bulk of births occur. The births

of the last decade are 1,250,000 (16.3 per cent) less than those of the preceding one (which covered the war, when the birth rate sank to levels never before recorded in this country). When compared with the last normal decade (1901-1911) the reduction amounts to 25.4 per cent. The almost unbroken fall in the birth rate has reduced it to 16.3 per thousand of population, which is only half that before 1890. A similar fall is reported by most western nations, but our birth rate is now lower than that of any other save Sweden, and the present rate is insufficient to maintain a stationary population. For this it is calculated that a rate of 19.5 would be necessary. The present level is 16 per cent below this. Though further slight increments in the total population may be expected in the next two decades, owing to the rapidly expiring momentum imparted by the higher birth rates of the past, there can be no doubt that, failing a considerable increase—of which there is no sign—a population maximum will then be reached, and will be followed by a small but increasing decline. This prospect has given rise to discussion in the press. On the one hand, pacifists are glad to see a general decline of populations, as they consider it will remove the most important cause of war. Others are full of gloomy foreboding. They say there is no general decline of population. Britain, Germany, France and Scandinavia are in decline, but the greater part of Europe, including Russia, Italy, Spain and eastern Europe, is still increasing. To go outside Europe, Japan is increasing by about a million per annum, while Australia and New Zealand are only slowly increasing. It is said that if the whites do not breed they will go under without any question of combat arising. Great Britain has now 5 million unmarried women of marriageable age and some millions of childless or one-child homes.

THE FALLING DEATH RATE

As a partial setoff against the decline in births, the deaths in the intercensal decade were more than 500,000 less than in two preceding decades. Numerically this is a reduction of 10 per cent, but if allowance is made for the increasing age and numbers of the population it represents a reduction in true mortality of more than 20 per cent on the last decade and of 30 per cent on the decade preceding the war. But the lower the point to which the mortality is reduced, the less is there room for a further fall and only limited assistance can be expected from this in arresting the decline due to insufficient births. By emigration there was a loss of population in the decade amounting to 177,000, considerably less than in previous periods.

INCREASED URBANIZATION

We are becoming more and more an urban people—a fact which must not only profoundly affect our morbidity and mortality but, according to anthropologists, such as Keith, even our physique. The proportion of persons living under urban conditions now amounts to 80 per cent of the population. More than half of the population is aggregated in comparatively dense units containing more than 50,000 in each, and half of this population is to be found in the thirteen largest cities

A STILL GREATER LONDON

London now contains 8,202,818 persons, more than one fourth of the total urban population. The increase in the intercensal decade was 9.7 per cent, twice as great as in the preceding one and nearly twice as great as for the country at large.

International Congress of the History of Science and Technology

The International Congress of the History of Science and Technology has been held in London under the presidency of Dr. Charles Singer, the medical historian. In his address, Dr. Singer said that the teaching of history was too little occupied with the affairs of the mind. The rise of science was the most important event in human history since the fall of the Roman Empire, but no textbook taught that. As to the beginnings of science, the belief that the Greeks learned science from the Egyptians seemed well founded. Within the past few months, two papyri had been published which threw light on Egyptian science. One, the "Edwin Smith" surgical papyrus of the sixteenth century B. C., dealt with injuries and contained observations that could be termed scientific, such as the association of injuries on one side of the brain with paralysis of the opposite side of the body.

UNDERESTIMATION OF THE IMPORTANCE OF SCIENCE

Prof. A. V. Hill, F.R.S., said that he was often told that scientists were illiterate. That was true, but he resented being told so by humanistic teachers who were equally illiterate, being ignorant of science. In 1628, in the middle of the Thirty Years War, appeared a little Latin quarto of seventy-two pages on "The Motion of the Heart and Blood." Was history really made by Gustavus and Wallenstein or by Harvey? The futile wars between England and France in the fifteenth century were known to every schoolchild. But what importance had they compared to a single technical advance of the same period, the invention of printing? If history was to deal with human greatness, with things that had given man control of himself and his surroundings, that had relieved him of superstition, ignorance and ill health, then Harvey, Darwin, Newton, Faraday, Maxwell and Rutherford, and their discoveries, deserved a more worthy place, even in children's history books. At present not man's greatness, but his patient stupidity, his courageous folly, his selfishness, his intolerance, were what was being emphasized.

Vitamin D Crystals

At the Royal Society the important discovery of a crystalline form of vitamin D was announced from three European centers. Professor Windaus of Göttingen stated that in the ultraviolet irradiation of ergosterol to produce vitamin D no state of equilibrium between the two was attained. If the irradiation was continued sufficiently long the ergosterol disappeared and overradiated products were produced, of which two had been obtained in crystalline form. Vitamin D was only an intermediate product. It appeared to contain three double bonds, as did ergosterol. After several attempts a reaction had been found which resulted in the separation in crystals, which were well formed needles. Dr. R. B. Bourdillon of the National Institute of Medical Research, London, spoke as a representative of eight workers who had obtained a crystalline product similar to that shown by Professor Windhaus. They were obtained by a distillation process in quantities of 2 or 3 Gm. on a number of occasions. Their antirachitic activity, in medical research council units, was from 18,000 to 20,000 per milligram. Three different workers had now obtained the crystalline product, but it was impossible to say whether the product was identical.

VITAMIN A

Professor von Euler of Stockholm said that at the beginning of the study of vitamin A it was found that carotene must be the substance which had growth-promoting qualities. Further experiments showed that there were two carotene substances with different melting points, one optically active and the other not. The absorption spectrum of one was similar to that believed to be characteristic of vitamin A in cod liver oil. In his laboratory the conversion of carotene into vitamin A had been achieved in the serum of hens to which carotene had been given.

VITAMIN B

Prof. B. C. P. Jansen of Amsterdam had succeeded in obtaining crystals of vitamin B in small quantities by precipitation. Dr. Seidel of Tübingen, without precipitating agents but by means of benzene, had obtained much larger quantities of material than Professor Jansen, but it would not crystallize. When tested on rats it had an activity in the neighborhood of the crystals.

PARIS

(From Our Regular Correspondent)

June 17, 1931.

Debate on the Excess of Physicians

The anxiety—not to say the fear—expressed by the French medical syndicates by reason of the increasing number of physicians, and especially because of the foreign physicians authorized to practice in France, which fears often found expression in the public press, has led to the drafting of a bill in the senate, which, if accepted, will modify the law of Nov. 30, 1892, on the practice of medicine in France. The conditions under which foreigners are permitted to practice medicine in France have always aroused dissatisfaction among the medical profession. The charges of late years have been more severe because the number of foreign students of medicine has been constantly increasing. In all the faculties of medicine taken together, there were, in 1930, 3,147 foreign students, as against 8,228 French students. From 1900 to 1928, the number of physicians rose from 16,815 to 27,500, whereas the population increased only 2,000,000. To combat this excess of physicians, the sponsor of the bill, Senator Dr. Dentu, holds that the first remedy naturally consists in withholding from foreigners the ready facilities that are offered at present to practice medicine in France. It is not a question of prohibiting them from practicing medicine but simply of demanding of them the same preparation that is demanded of French physicians. The commission on instruction proposes, therefore, to require that any foreigner who wishes to practice medicine in France must first be naturalized. Furthermore, it demands that, in order to secure the government diploma, which alone confers the right to practice medicine, "equivalent studies" no longer be accepted in place of certain studies in the French course leading to the degree of bachelor, which practice in the past has allowed, for example, Rumanians, inhabitants of Mauritius and students from the Faculté de Beyrouth, to make use of diplomas obtained in their own country as a substitute for the French baccalaureate. If such equivalent studies continue to be recognized, the application of the principle should be at least greatly curtailed. Furthermore, the transformation of the university diploma into a government diploma, a privilege that is too readily accorded to foreigners under pressure brought to bear by their ambassador, will not occur except under strict guarantees. Dr. Chauveau brought out that there was no thought of restricting the traditional hospitality of French universities. The purpose is solely to make a distinction between foreign students who return to their own country after obtaining a university diploma and those who have come to settle in France to practice medicine. The latter should be subjected to the same requirements as are French students; namely, the baccalaureate, the premedical course, naturalization and military service. Dr. Debierre, senator, demanded that the baccalaureate studies required before entering on medical studies should include a knowledge of Greek and Latin, without which medical terminology is almost unintelligible. It was a mistake recently to accept as equivalent a baccalaureate without the classical languages. The students accepted on such a basis have had an inferior cultural training.

Besredka's Opinion of Cutaneous Vaccination Against Diphtheria

Vaccination against diphtheria by rubbing the skin with an ointment containing diphtheria bacilli attenuated by formaldehyde, as recommended by Löwenstein in Vienna, has raised in Austria and Germany a controversy the reverberations of which have reached French scientific circles. It is in reality an application of the method of Ramon, professor at the Institut Pasteur de Paris, to whom science is indebted for the discovery of formaldehyde for the attenuation of cultures. Besredka has recently published in the *Annales de l'Institut Pasteur* an article in which he affirms his belief in the possibility of genuine vaccination by means of the Löwenstein method. Since vaccination by cutaneous friction, by means of diphtheria toxin, in the guinea-pig is accepted by some and denied by others, Besredka experimented with rabbits. He found that the mere fact of shaving a spot on the rabbit's body and applying mechanical friction, without the application of diphtheria toxin, is sufficient to assure the animal a local nonspecific immunity that endures for from twelve to fifteen hours. If, before the expiration of this time, one applies to the shaved spot, at intervals of from eight to ten days, an ointment containing diphtheritic toxin in steadily increasing doses, the immunity secured is increased, and, while at first nonspecific, becomes specific; that is to say, potent against the inoculation of diphtheria, when confined to the treated region. Gradually the immunity becomes general, as the blood of the animal becomes charged with antibodies. It then resists the inoculation of heavy doses of toxin. This specific immunity in the rabbit has a duration exceeding two months.

Raising Funds for the American Hospital at Neuilly

The financial difficulties with which the American Hospital at Neuilly, just outside of Paris, has had to contend have induced its board of directors to make an appeal for private subscriptions. General Pershing, chairman of the committee for the solicitation of funds, has published a statement in which he sets forth the reasons for the conservation of this hospital. Four years ago a similar appeal was made. General Pershing points out that it is not a question of charity but of national prestige. To date, the committee has secured gifts in France and America amounting to $103,017. The minimum amount to be attained should be $300,000.

Suppression of the Illegal Practice of Medicine

The Syndicat professionnel des médecins de la Seine created, some time ago, a special bureau to promote the suppression of the illegal practice of medicine. The bureau prosecutes in the courts healers violating the law and demands, if they are found guilty, that they be compelled to pay damages to the syndicate. Dr. Coldefy, who is in charge of the bureau, has published a report outlining his activities during the year 1930. He handled 158 cases. He verified the legality of 260 diplomas, filed twelve complaints with the prefecture of police, secured forty-one sentences in the courts, and obtained 35,000 francs by way of damages. Among those found guilty there were 12 healers having no other occupation, 7 nurses, 2 "magnetizers," 1 chiropractor, 1 orchestral leader, 1 farrier, 2 accomplices in abortive maneuvers, 1 yogi, and 14 physicians. The physicians were practitioners who had protected with their diplomas illegitimate healers by consenting to sign their prescriptions, the law punishing them as accomplices in an illegal act. In addition, twenty sentences were imposed on drug addicts for purloining prescription blanks from a physician's office. Coldefy in conclusion deplores the light sentences imposed by the courts in these cases. As for the indemnities obtained, they scarcely cover the fees of the lawyers engaged by the syndicate.

International Congress of Comparative Pathology

The second International Congress of Comparative Pathology will be held in Paris, October 14-18, under the chairmanship of Professor Achard, general secretary of the Academy of Medicine. The official topics on the program are: Vaccination Against Tuberculosis (Professor Calmette, Professor Gerlach of Vienna, Professor Kfouri); Brucella Infections in Man and Animals (Van der Hoeden of Utrecht, Martin Kristensen of Copenhagen, Oluf Bang of Copenhagen); Milk as a Pathogenic Agent (Dr. Lesne, Porcher and Tapernoux of Lyons, Rowel of Quebec); Mineral Deficiencies (Simonnet and Randoin, Dr. Sjollema of Utrecht, H. B. Humphrey of Washington, Jacob Eriksson of Stockholm, Kotte of Freiburg im Breisgau); Ultraviruses (Dr. Hauduroy, Professor Flu of Leyden, Quanjer de Wageningen, Gussow, Canada, and von Brehmer of Berlin);

Helminthiasis (Professor Joyeux of Marseilles, and Baer, Stevenel and Lerroux); Psittacosis (Professor Verge of Alfort); Anaphylaxis (Prof. L. K. Wolff of Utrecht, Prof. D. Storm van Leuwen of Leyden, Dr. Koeppenberg of Groningen). An enormous number of communications have been announced, coming from physicians of many different countries.

Appropriations for Health Work in West Africa

Of the funds realized by the colonial loan authorized by parliament, last November, 120,000,000 francs ($4,800,000) has been allotted to French West Africa, which is the colony most affected by tropical diseases. Of this sum, 43,000,000 francs is now available, 3,580,000 francs of which will be used in the chief cities for the recruiting of medical personnel and for the creation of instruction centers. The effort will be directed chiefly toward the improvement of hygienic conditions in urban and rural centers, the protection of childhood and the eradication of social diseases. Large sums have been appropriated for the sanitary protection of workers in the dockyards and for the crusade against social diseases and infectious diseases (tuberculosis, plague, yellow fever). With this purpose in view, so-called flying squadrons will be created for the detection, the treatment and the prophylaxis of these various diseases. Finally, the subsidies allotted to the Pasteur institutes in Dakar and Kindia will enable the directors to carry on research that is indispensable in the crusade against diseases that decimate the native population.

Sale of Antituberculosis Seals

The sale of antituberculosis seals for the year 1930 produced more than 21,000,000 francs ($840,000), a considerable increase over previous years. A total of 210,000,000 seals were sold, or an average of five for each inhabitant. The three departments in the lead were Doubs, with an average of 12.04 seals per inhabitant; Oise, with 11 seals, and Nord, with 8.83 seals. The department of the Seine ranked the seventeenth. In North Africa, Tunisia made an excellent record: 12.36 seals per inhabitant. A special meeting for the organization of the campaign of 1931 was held, June 20, at the Sorbonne.

BERLIN

(From Our Regular Correspondent)

June 22, 1931.

The Congress of Psychotherapeutists

The Allgemeine ärztliche Gesellschaft für Psychotherapie, which comprises all groups and schools of medical psychotherapy, held its previous meetings in Baden-Baden and Bad Nauheim; but, this year, the congress was held in Dresden, May 14-17, in order to give the members an opportunity to visit the International Hygienic Exposition. Dresden, some hundred years ago, was a center of the psychotherapeutic movement; it was the scene of action of Carl Gustav Carus, whose creative and versatile mind recognized the great importance of psychic influences in the genesis and healing of morbid processes. As a practicing physician, he formulated concepts that were not fully understood and appreciated until recent years. In the spirit of Carus, who was an intimate acquaintance of Goethe, the modern scientists there assembled sought to extend the field of psychotherapy. This endeavor found its expression in the first paper presented, which dealt with "The Treatment of Psychic Problems from the Standpoint of the Body." The first speaker, Heyer of Munich, emphasized that, from the physical side, there are few modes of influence that are directed against the cause of disease. The problem of nutrition as it affects mental welfare, in spite of the volumes that have been written on diet, has scarcely been touched. Many endeavors in the field of dietetic reform are based rather on practical economic considerations than on scientific knowledge. In the former methods of treating nervous disorders, the symptom is, as it were, covered up, as in the psychotherapeutic method of suggestion, or the organism is stimulated to performance by glandular preparations or by mechanical supports. If the body is to be trained for the overcoming of disease, the stimulation must be applied where tensions arise; namely, especially in the region of the vegetative nervous system. This system of nerves (the sympathetic and the parasympathetic), in combination with the endocrine glands and the ion balance, constitutes the bridge between physical and mental processes. Corporeal influencing of the mind may be brought about also by gymnastics and massage, and by application of irritants, baths and other general measures. In the child, many nervous disturbances occur within the body; hence the importance of roboration, allaying of irritation and of physical exercise in many neuroses of children. Exercise appears, indeed, to be one of the most important means of influencing the mind through the body, either in the form of sport or as autogenous training.

THE ANALYSIS OF DREAMS

The official paper on "The Practical Utility of Dream Analysis" was presented by C. G. Jung. of Küssnacht, an authority. He characterized dreams as a form of expression of the subconscious mind. The dream portrays the deeper inner state of mind of the dreamer, the reality of which is either absolutely denied or reluctantly recognized by the conscious mind. The dream mind, or the "night psyche," has at least as great, if not greater, wealth of content at its disposal as the more fully conscious "day psyche." The first dreams occurring after the beginning of psychoanalytic treatment are often surprisingly transparent and enable the practitioner to recognize mental diseases. The significance of a dream the patient must interpret himself, with the aid of the physician. The interpretation necessitates extensive cooperation. Also Kretschmer, professor of psychiatry in Marburg and president of the society, recognized the great psychologic value of dream analysis and presented valuable contributions, from the standpoint of the clinician.

English Medical Men in Germany

For the first time in nearly twenty years, the Royal Institute of Public Health met again on German soil (at Frankfort-on-Main, May 19-24). The opening of the session was made a ceremonial. The audience was composed of about 200 Englishmen and a fair representation of German scientists. It was thus a congress of scientists and professional men of the two nations. However, the Royal Institute of Public Health does not meet in Germany in the capacity of an invited guest but rather as an independent corporation. It is not an international congress, nor is it English-German or German-English but an English meeting on German soil. The members wore their official regalia and held an English religious service in St. Paul Church, to which the public was invited. The English language was used throughout the session. The purpose of the organizers of the meeting was to get in touch with the Germans (not necessarily physicians) for mutual benefit and progress, which purpose was well served.

In the address of Marquis Reading, the viceroy of India, who was represented by the British consul general, the need of all nations making common cause against disease, the common enemy of mankind, was emphasized.

In behalf of the German federal government, Ministerial-dirigent Prof. Dr. Taute, of the federal ministry of the interior, welcomed the Royal Institute of Health on its second visit to Germany. When he expressed the hope that closer relations between the scientists of the two countries might be established, the Englishmen gave vent to loud applause.

In recognition of the honor that Sir William Smith, the director of the institute, bestowed on Ehrlich in 1907, when he invited him to deliver in London the Harben lectures, and also because Smith had convened this year's congress in Frankfort, he was presented with the Ehrlich-Weigert plaquette, which had

just been executed. The British consul general, as an expression of gratitude for his oft repeated aid rendered to students, was made an honorary freeman of the University of Frankfort. The Royal Institute of Public Health in turn made Professor Fischer-Wasels, occupant of the chair of pharmacology and the acting president of the university, and Bonsanquet members of the institute, and bestowed the highest honors in their power to bestow, awarding to Professor Welch, of the Johns Hopkins University in Baltimore, the Harben gold medal, and inviting Professor Neisser to deliver the Harben lectures for 1932.

The words of gratitude expressed by Professor Welch, who is recognized as one of the first authorities in hygiene in the United States, gave evidence of the warm feelings that inspired them and were received with enthusiastic applause. For Professor Welch Frankfort constituted a congenial atmosphere, for it was here that he formed a lifelong friendship with Ehrlich at the time they both were studying under the renowned Cohnheim. Professor Welch mentioned with gratitude several of his German professors: Ludwig, Recklinghausen and Robert Koch, under whom he had studied in Leipzig and in Strasbourg.

The congress was divided into six sections. The official topics were: Medicine in Relation to Communal Hygiene; House Construction and City Planning; Industrial Hygiene; Women, Children and Public Welfare; Tuberculosis; Pathology, Bacteriology and Biochemistry. More than a hundred communications were presented, England and Germany being represented by some of their ablest men.

Death of Prof. Oskar Minkowski

The death of the eminent clinician Prof. Dr. Oskar Minkowski, June 17, from pneumonia, at the age of 73, is announced. When, a few years ago, insulin was introduced by American investigators for the treatment of diabetes, studies that Minkowski had carried out in 1893, while serving as extraordinarius for internal medicine in Strasbourg, were brought into the forefront of interest. In cooperation with his colleague the internist Professor von Mering he had found that there are certain relations between diabetes and the pancreas (pancreatectomy in the dog, and other experiments). From the pancreas insulin is obtained, and thus the researches of Minkowski became one of the foundation stones of modern treatment of diabetes. Hence he was called, with some authority, the "grandfather of insulin." Minkowski was born near Kovno, Lithuania, in 1858. He attended the Altstädtisches Gymnasium in Königsberg, on the completion of which he entered the University of Königsberg and became later privatdozent. From here he went to Strasbourg, where he worked in Naunyn's clinic. He was engaged more particularly in researches on metabolism, and his numerous physiologic-chemical studies showed him to be a well informed and critical medical man. After he published his first research on the influence of the liver on metabolism and the essential nature of diabetes, he received a call to the University of Cologne. He later accepted a chair at the University of Greifswald, and afterward removed to Breslau. Since his retirement in 1926, he lived in Wiesbaden. Minkowski's chief field of study was the diseases of metabolism. He was regarded as an authority in the diagnosis and the treatment of gout, of diseases of the liver and stomach, and of diabetes. But he advanced also other branches of clinical medicine, in which his extraordinary knowledge of chemistry served him in good stead. Minkowski was an unusually inspiring scientist and teacher. It was astonishing how thoroughly he always treated all difficult epidemiologic and clinical questions that arose. Minkowski was, for several decades, one of the most trusted consultants, and after he retired to Wiesbaden his advice was still sought. He was also a prolific writer.

Professor Lichtwitz's Call to Berlin

The position of internist and medical director of the Rudolf Virchow-Krankenhaus in Berlin has been vacant for several months. As is unfortunately frequently the case when such positions become vacant, a struggle has been going on behind the scenes in which the supporters of certain candidates could not always furnish tangible evidence for the asserted qualifications of the persons favored. Finally, however, a list of candidates was proposed: Lichtwitz, von den Velden, von Domarus. The choice has fallen on Professor Lichtwitz, director of the municipal hospital in Altona. He will take the place of Prof. Leopold Kuttner, deceased. Berlin, without doubt, has secured in him an experienced internist. Lichtwitz's researches have been chiefly in the field of the diseases of metabolism. His textbook "Klinische Chemie" has hardly its counterpart—at least, not in the German literature. About a year ago, Lichtwitz visited the United States and found there also deserved recognition.

Trial of Physicians Following the Lübeck Disaster

The trial of the physicians Prof. Dr. Deycke, Prof. Dr. Klotz and Obermedizinalrat Dr. Altstaedt for the part they played in the Lübeck disaster, as a result of which more than seventy infants inoculated against tuberculosis with the Calmette vaccine, improperly handled, succumbed, will be held in the latter part of September, it is officially announced. The collected evidence in the case comprises eighty typewritten pages. One of the largest halls in Lübeck has been engaged for a long period in which to hold the trial. The parents of the seventy-six infants who died as a result of the inoculation will appear as parties litigant, which brings the number of secondary litigants up to 250.

TURKEY

(From Our Regular Correspondent)

Ankara, July 15, 1931.

New Public Health Law and Child Welfare

According to the provisions of the new public health law the ministry of health and social assistance is to organize child welfare stations and take measures conducive to the hygiene and welfare of infants and preschool children, to the dissemination of the application of infant hygiene among the population, and to a lowering of infant mortality. The ministry of health is to supervise all establishments in connection therewith.

The importation and sale of products, the list of which is to be prepared by the ministry of health, for the exercise of birth control or the provocation of abortion is prohibited. Such products which are used in the practice of medicine may under conditions specified by the ministry of health be imported and sold in pharmacies on prescription.

Confinements in governmental maternity hospitals are gratuitous. Parturients are to remain in the hospital at least for a week after delivery or longer if necessary. Physicians and midwives in governmental or municipal service are under obligation to attend confinements among the indigent without fee.

No woman is permitted to work in factories, workrooms, mills or other establishments governmental or private during the three weeks preceding and the three weeks following confinement, unless she presents a medical certificate testifying that such work is not detrimental to the health of mother or child.

Provision is to be made in the budget of the ministry of health and social assistance for the setting aside of a certain sum each year from which women with six or more living children receive a money grant. A special medal is to replace the grant in those cases in which it is preferred.

A woman may not serve as a wetnurse unless she is able to prove by means of an official document that her own child has attained the age of at least 7 months and that she is in a condition to nurse another child. In case the child of a wetnurse is less than 7 months old she is to bring official evidence that her child is nursed by another woman. Wetnurse certificates are granted if, as the result of a medical examination, the wetnurse is found free from disease, in particular tuberculosis, venereal disease or leprosy. There is no fee to be paid for such certificates.

All institutions, governmental, private or charitable, where abandoned children, orphans or children below the age of 7, though they may have their parents living, are cared for either with or without compensation, are subject to supervision and inspection by the ministry of health. Notification by the proprietor is to be made to the ministry of health in case of the establishment of an institution of this kind.

Persons intending to take children below the age of 7 into their homes in order to care for them are obliged previously to obtain a special permission by making application to the local municipality. Such permissions are granted only after the home and other conditions of the applicants have been investigated by the municipal health department. Such homes are likewise subject to inspection by the ministry of health and social assistance.

If conditions are found which are not in harmony with the safeguarding of the life and health of children, these institutions or persons in charge are under obligation, on the health inspector's written request, to correct such conditions. In case the institution or person does not within fifteen days conform with the request, permission to care for children will be withdrawn or the institution closed.

The responsibility for the protection of abandoned children until they have completed their sixth year rests with the municipality or, if abandoned in a community where there is none, with the council of aldermen. Municipalities having no special institution available may place such children in foster homes. For children that have reached the age of 6, further education is entrusted to the ministry of public instruction.

In communities with a population of more than 10,000 the municipalities are to establish a dispensary and a consultation center for infants. The policy and method of administration of these institutions is determined by the ministry of health and social assistance. In communities with a population of more than 40,000, a milk station is to be added to the dispensary. In cities with a population of more than 100,000, such institutions are to be increased in number according to necessity.

The construction and the general sanitary condition of all educational institutions as well as the prevention of communicable diseases and epidemics are under the supervision of the ministry of health. The supervision of the personal hygiene of the students is exercised by the authorities, societies or persons in charge of schools.

The students of all schools, at intervals determined by the school physician, are to undergo a physical examination, mental, auditory and vision tests, the results of which are to be entered on the health records of each student.

Children below the age of 10 who through their parents, or ophans through their relatives or guardians, are exposed to ill treatment or enticement either by persuasion or by force, representing a menace to the life, health or morals of the child, may be separated from those with whom they live and be cared for in a governmental or municipal institution.

It is prohibited that children below the age of 12, even though accompanied by their parents or guardians, visit places where alcoholic beverages are sold or that alcoholic beverages of any kind be offered or sold to persons below the age of 18.

It is prohibited that children below the age of 12 visit motion picture houses, theaters, dance halls or bars. But children having attained the age of 6 may be taken to a motion picture house or theater where performances of an educational character especially designed for children are given.

Municipalities of all townships or cities are under obligation to establish one or more playgrounds for children, as well as an athletic field of the necessary size relative to its importance and the number of inhabitants of the community.

A theoretical and practical course in child care and training is to be organized in grammar and high schools for girls at the rate of at least a one hour period a week. The school authorities are to decide in what grade the course shall be given.

Pneumonic Plague Averted

The spread of pneumonic plague was reported some time ago from Persia and later from Armenia and Nekhichevan Turkish cities near the Caucasian and Persian border, where the disease was reported to have first originated. A physician was at once sent with bacteriologic supplies and the necessary accessories to preventive measures. All roads and highways were ordered closed with the exception of one, where all travelers had to stop for examination and vaccination. On the slightest suspicion, bacteriologic examination was made and the persons detained in the infirmary tent. Such and similar precautions were taken in four of the eastern provinces—Artvin, Kars, Erzerum and Bayazit; not one case of pneumonic plague gained entrance and thus the threatening epidemic was warded off.

BELGIUM

(From Our Regular Correspondent)

July 10, 1931.

Neoplasms in the Tropics

Addressing the Société médicale de Léopoldville, Mr. Seidelin called attention at the start to the many reservations that must be made in the examination and utilization of statistics pertaining to cancer. Previous publications have shown that all kinds of neoplasms are found in the natives of the tropics but in different proportions than in European countries (Mouchet, Gerard, Van Nitsen; Guillot, the Belgian Congo). Carcinomas in general are less common; and carcinomas of the digestive tract, so frequent in Europeans, are rare. Seidelin examined 300 histologic specimens and found 71 neoplasms. In agreement with observations in other tropical countries, the number of sarcomas was about the same as that of carcinomas. This fact Seidelin explains by calling attention to the smaller proportion of persons reaching an advanced age, 50 years and beyond, since sarcomas, and especially those of the digestive tract, have a predilection for aged persons. In the statistics of Seidelin, rare carcinomas constitute a large proportion, and they especially have less predilection for elderly persons. Seidelin emphasizes the need of great caution in the diagnosis of primary carcinoma of the liver, which is rather frequently reached after examination of natives. The examiner should suspect the existence of metastases from the digestive tract or from the prostate.

French Congress of Medicine

The thirty-first Congrès français de médecine, under the chairmanship of Professor de Beco, was held in Liége in honor of the centenary of the independence of Belgium.

HYPERTHYROIDISM

Drs. Labbe, Azerad and Gilbert-Dreyfus presented a clinical study on hyperthyroidism. In their opinion, the only symptom that can be relied on is the augmentation of combustion in the body as reflected by the increase of basal metabolism. Dr. Dautrebande considered the physiology of the thyroid. He holds that the metabolism of iodine dominates and regulates thyroid activity. Drs. Bérard and Peycelon discussed the surgical treatment. Subtotal thyroidectomy may be regarded as the operation of choice.

THE METABOLISM OF CALCIUM

Dr. Brull of Liége dealt with the physiology and the general pathology of calcium. In the human organism, 99 per cent of the calcium is fixed in the skeleton. The adult has little need of calcium, and he gets it in the food. On the other hand, a young child or a nursing mother disposes of considerable amounts of calcium. Calcium is absorbed not only from organic but also from mineral compounds, but the mechanism is complex. The acidity of the intestinal contents, the presence of biliary salts, and the interaction of phosphates are elements capable of acting on the solubility of calcium salts and of modifying their absorption. Calcium is excreted, to a great extent, by the intestine; but this elimination is not necessarily a measure

of what has not been absorbed, since there is an absorption in the small intestine and a reexcretion in the colon. The principal depository of calcium in the human organism is the skeletal system. It is necessary for the regulation of neuromuscular conductivity and stimulability. Its concentration in the blood is in relation to the activity of the parathyroids. Calcium exists in the organism to a great extent in an ionized state; it exists also in the colloidal state and in a complex diffusible state that is not ionizable. These various forms are in a state of equilibrium. To the ionized form are attributed the myotonic, coagulant and regulatory properties of the renal secretion. The colloidal calcium is the reserve. Through the kidneys the part that is biologically inutilizable is eliminated. Through researches on tetany, these observations of biochemistry have been verified.

P. Weil and C. Guillaumin presented a paper on calcemia. They made these two statements in explanation of their pessimistic attitude: The blood cannot be the proper medium in which to search for evidence of cellular disorders of the tissues. In addition to quantitative changes, there may be qualitative changes that cannot be discovered with the means at present available.

INSULIN IN NONDIABETIC DISORDERS

In his physiologic study on insulin, Dr. J. P. Hoet concluded that, in addition to acetonemic conditions, insulin treatment may be advisable in liver disorders, such as icterus and hepatic insufficiencies. These hepatic disorders are associated with a loss of glycogen, which injections of insulin combined with dextrose are capable of repairing. In addition to these two groups of disorders, insulin treatment has greatly improved parkinsonian states. Here it was likewise a question of restoring the glycemic reserve of the muscles.

A New Journal Dealing with Plastic Surgery

La revue de chirurgie plastique, which has its headquarters at Brussels, has published its first number. It contains articles on reparative and cosmetic plastic surgery, written by specialists throughout the world. It will be devoted to progress in maxillofacial orthopedics and to restorative prosthesis, including all efforts of a medical nature looking toward morphologic amelioration. Its chief purpose will be to afford practitioners and surgeons an opportunity of keeping abreast of all that is published of importance in these fields, without finding it necessary to have recourse to many different publications in which these questions are treated. The review will publish, in addition to original articles, documents of all kinds that have appeared on this subject from the dawn of the surgical era down to the present day. The review will appear four times a year. An author may use French, English, German, Italian or Spanish. At the end of the original articles there will be summaries in French, English and German. In this form, the *Revue de chirurgie plastique* will present an essentially international character.

Helminthologic Observations on Negro Children

J. Schwetz and H. Baumann examined the feces of more than 1,000 pupils in the various schools of Stanleyville, in the Belgian Congo. The children were in good health, presenting no digestive disorders. The proportion of parasites was about the same in the boys and the girls. There was no difference between the children attending the schools in the center of the town and those attending schools in the outskirts. *Ancylostoma* was the most frequent parasite. It was found in more than 41 per cent of the children examined. Next in frequency came *Ascaris,* 28 per cent; then *Bilharzia,* 5 per cent (ova of *Schistosoma haematobium* being more common in the stools than *Schistosoma mansoni*). Less frequent were *Trichocephalus,* 3.2 per cent; the eelworm, 3.6 per cent; *Oxyuris,* 0.2 per cent; *Taenia inermis,* 0.1 per cent. This high percentage of intestinal parasitism is not surprising in view of the uncleanly habits of the young Negroes.

ITALY

(From Our Regular Correspondent)

May 31, 1931.

Meeting of Dermatologic Society

The Società italiana di dermatologia e sifilografia will hold its thirty-second session at Genoa, next autumn. Three topics are to be considered in the official papers: (1) pemphigus and pemphigoid conditions (assigned to the Clinica dermosifilopatica of Genoa); (2) recent views on antigonococcus therapy, to be divided into two parts: (*a*) chemotherapy of gonococcal infection (assigned to the clinica di Bari), and (*b*) physical therapy in gonococcal infection (assigned to the clinica di Roma), and (3) acrodermatosis in relation to circulatory disturbances (assigned to the clinica dermosifilopatica di Messina). The unofficial communications must deal exclusively with the three topics mentioned. In addition, the following biennial theme has been chosen for discussion at the 1932 session: "The new aspects of cutaneous physiopathology in relation to the new data derived from morphologic and physiochemical researches." The theme will be divided into subtopics, which will be assigned to the respective clinics.

True and False Robustness

Prof. Nicola Pende, "medical clinician" of the University of Genoa, delivered recently a lecture on the subject "True and False Robustness." The speaker pointed out that, although physicians and laymen have concerned themselves with the recognition and the treatment of evident constitutional weaknesses, they are nevertheless little known and are sometimes the cause of diagnostic errors, as they often give the appearance of exuberant health or of false robustness. True robustness is the perfect harmony of the parts and of the organic functions, through which a human being is not only healthy but also possessed of reserves of vital energy and can resist without becoming ill the attacks of his environment. Therefore, robustness differs from health, which may signify a state of relative sufficiency of all the functions, so that the individual is not sick and does not appear sick. Under the appearance of health may be hidden hereditary weaknesses and morbid predispositions; hence it is a question of a labile equilibrium, whereas the equilibrium of robustness is stable and resistant.

In the evaluation of robustness it is a wrong conception to attach undue importance to the exuberance of certain attributes of the muscular system or of the blood. Physicians must regard such exuberance as nonphysiologic and hence a source of weakness. Among the disharmonious evidences of robustness, the most important to recognize are those of children, due to an excess of corporeal mass arising from an overabundance of lymph and of water in the tissues; those of juveniles and of adults due to an excessive development of the muscular apparatus, and those of advanced years and of senility due to an excess of nervous energy.

Children with a false appearance of robustness present often a lymphatic and arthritic diathesis and are more predisposed to infectious diseases and to disorders of metabolism.

It is a common error also to regard as robust juveniles and adults with an athletic habitus, with large highly developed muscles, brought to greater extremes by the instinctive tendency to indulge in all kinds of sport. Such constitutions are often predisposed to degeneration of the heart and the arteries, hypertension, and rheumatic and uricemic manifestations.

A third class that presents false robustness consists of plethoric, full-blooded persons, with a sturdy bodily habit, bull neck and a congested countenance. These are subject to early changes of the arteries, cerebral hemorrhages, disorders of the heart and kidneys—of sclerotic origin.

There is a fourth class of subjects who, although their age ranges between 60 and 70, appear endowed with an inexhaustible youthful energy. In many such cases it is a question of

a special nervous dysequilibrium; namely, of an excessive stimulation of the sympathetic system, which stimulates, in turn, the heart, the cerebral cortex and sometimes certain endocrine glands. There results a state of arterial hypertension and of motor and psychic superexcitation, through which such persons may come to a rapid end, either through an acute infection or through the damage inflicted by arteriosclerosis and arterial hypertension.

The recognition, by the physician, of these deceptive states of health will save the individuals and their families painful surprises. In this field of false vital exuberance every effort must be employed to prevent the useless waste of supplies of nervous and mental energy.

The Forlanini Foundation

The administrative council of the fondazione Carlo Forlanini has established three competitive prizes. The first prize (of 15,000 lire) will be awarded to a graduate in medicine and surgery, who, having the necessary preparation, desires to enter an Italian or foreign institute to carry on researches on tuberculosis in general and on pulmonary tuberculosis in particular. The second prize (of 20,000 lire) will reward researches on tuberculosis, with especial reference to pulmonary tuberculosis. The third prize (of 10,000 lire) will be awarded to the best work on the biologic properties of calcium and its action on the course of tuberculosis.

Didactic Problems of the Universities

The ministry of public education has presented a memorial to parliament on the present status of certain didactic problems that affect the universities and that concern more particularly the medical profession of Italy, including the students of medicine. After giving the assurance that the government is no longer considering the suppression of certain of the smaller universities, the speaker announced that at Turin a new hospital that will combine all the clinics is being erected and that agreements in regard to the organization of the medical institutes have already been confirmed by the government and the local societies at Bologna, Pisa and Rome. To the deputies who had expressed regrets that the "state examination" does not sufficiently guarantee the practical preparation of the physician, the ministry replied that the suppression of the examination would certainly not aid in furnishing such a guarantee, and that the state examination presents at least the advantage that, after so many years of study essentially theoretical, the students are obliged to fix their attention on the preparation for tests of a professional character. Any increase or diminution of the number of years of study necessary for securing a degree in medicine and surgery is to be excluded. The faculties of medicine, at the request of the ministry, are studying the question as to whether it is possible to diminish the duration of the instruction in the premedical course.

The speaker described then the development that the government has given to physical education in the schools, pointing out that there are at present in Italy 1,400 athletic fields and an equal number of fields for the enjoyment of sports, in addition to the Alpine and seashore camps, playgrounds and open-air schools.

Child Mortality

Prof. Corrado Gini, director of the Istituto centrale di statistica, has carried out a research on a large number of Italian families with respect to child mortality, his data being based on observations made in the institute. According to the last census, the number of Italian families that had at least seven children was 1,532,206. The greatest number of children was found in the less educated classes and, independently of the social level, among the agricultural classes, as compared with the industrial classes. A comparison of the mortality of the children observed during the first five years of life in large families throughout the country leads to the conclusion that the large number of children is not in itself a decisive factor in causing a higher child mortality. The differences in child mortality in the various occupational classes are due more to differences in economic conditions than to the social level. Nevertheless, a certain influence of large families on child mortality is undeniable.

Contralateral Pneumothorax in Treatment of Tuberculosis

The Federazione italiana per gli studi scientifici sulla tubercolosi held its session in Rome under the chairmanship of Prof. Eugenio Morelli. Professor Mendes presented a paper on contralateral pneumothorax, which he has tried. In spite of the fact that he had selected subjects in which an easy movability of the mediastinum was to be expected and which presented all the other indications for the application of contralateral collapse therapy, the results obtained were not satisfactory. In three patients it became necessary to interrupt the treatment that was being tried and to resort to phrenic avulsion. The speaker considers that the failures were due to the fact that contralateral pneumothorax, being necessarily hypotensive, cannot produce a selective collapse. Professor Signorelli took part in the general discussion and affirmed that the efficacy of the pneumothorax must be in direct relation to the second law that he explained some time ago and on which depends the recovery from open pulmonary tuberculosis; namely, the so-called thoracic plethora, or the disproportion between the container and the contained.

Monaldi, on the basis of his personal experience, brought out that contralateral pneumothorax can be beneficial only in case of lesions of the middle or lowest third of the lung, and remains without effect in lesions of the uppermost third.

Professor Morelli pointed out that abuse of the valuable method of Forlanini is dangerous, is without advantage to the patient and, on the contrary, may bring damage. Bilateral pneumothorax should be employed with great caution and only in exceptional cases, whereas some physicians use the method rather extensively. He holds, in agreement with the cases reported by Mendes, that contralateral pneumothorax is useless and even injurious.

Professor Motta considered the value of the Vernes test in laryngeal tuberculosis. It appears that in unilateral pulmonary tuberculosis the photometric index of the Vernes test ranges from 15 to 50, and in bilateral tuberculosis from 31 to 75. In the forms complicated by laryngeal localization, a higher average is maintained. Hence, to the greater gravity of the tuberculous infection corresponds a higher photometric index.

Marriages

ALEXANDER GORDON GILLIAM, Petersburg, Va., to Miss Laura Edmondston Venning of University, June 20.

HENRY L. SOMERS, Drexel Hill, Pa., to Miss Anne Marguerite McKnight of Philadelphia, July 15.

FREDERICK M. PATTERSON, Greensboro, N. C., to Miss Marion Willis Reeves, June 10.

WARREN STONE BICKHAM, Richmond, Va., to Miss Alice Martin of Brooklyn, June 30.

JOHN RUDOLPH SCHENKEN, Iowa City, to Miss Lucille Jerald of Waterloo, May 27.

HERBERT J. GORHAM, Durham, N. C., to Miss Aileen Ross of Nashville, recently.

JOHN J. CLEMMER, JR., Cresco, Iowa, to Miss Edna Stockig of Boone, June 3.

WALTER E. EISENBERG to Miss Ruth Bailis, both of Chicago, June 14.

LEWIS H. MARKS to Miss Marian Sears, both of New York, July 19.

Deaths

Daniel Atkinson King Steele ⊕ Sarasota, Fla.; Chicago Medical College, 1873; member of the American College of Surgeons, and the Illinois State Medical Society; emeritus professor of surgery, one of the founders in 1882, at one time president, professor of principles and practice of surgery and clinical surgery, senior dean and professor and head of the department of surgery, College of Physicians and Surgeons, Chicago, later known as the University of Illinois College of Medicine; served during the World War; president of the Chicago Medical Society, 1884-1885 and the Chicago Surgical Society in 1907; formerly president of the medical staff, and member of the consulting staff, Cook County Hospital, one of the founders and president of the Chicago Hospital and the Westside Hospital, on the staffs of the Michael Reese and University hospitals, Chicago; aged 79; died, July 19.

Victor Howard Pentlarge ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1902; member of the American Urological Association; formerly on the staffs of the Jewish Hospital, Beth Moses Hospital, Israel-Zion Hospital, Brooklyn and Brownsville hospitals; aged 51; died, June 23, at his summer home in Belgrade Lake, Maine, of angina pectoris.

Victor Wiley Maxwell, Gulfport, Miss.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; member of the Mississippi State Medical Association, and the Radiological Society of North America; aged 40; died, June 26, of general peritonitis, following an appendectomy.

Homer I. Jones, Indianapolis; Medical College of Indiana, Indianapolis, 1893; formerly lecturer on osteology and syndesmology, Central College of Physicians and Surgeons; Spanish-American War veteran; at one time on the staff of the City Hospital; aged 65; died, July 7, of arteriosclerosis.

Bradford Churchill Loveland ⊕ Syracuse, N. Y.; University of Michigan Medical School, Ann Arbor, 1888; member of the American College of Physicians; on the staff of the Syracuse University Hospital; aged 69; died, June 25, of myocarditis.

Herbert J. Higgs, Detroit; Michigan College of Medicine and Surgery, Detroit, 1901; member of the Michigan State Medical Society; veteran of the Spanish-American War; aged 63; died, July 7, in the U. S. Marine Hospital, of cirrhosis of the liver.

Erwin Waldemar Schueller ⊕ Columbus, Ohio; Starling Medical College, Columbus, 1895; formerly health officer of Columbus; formerly on the staffs of the Mercy Hospital and the Grant Hospital; aged 60; died, July 6, of heart disease.

Charles C. Wert ⊕ Covington, Ind.; Medical Department, University of Indianapolis, 1903; past president of the Fountain-Warren Counties Medical Society; formerly mayor; aged 56; died, June 21, of carcinoma of the mediastinal glands.

Edward Pickett Hill, McShan, Ala.; Medical Department of the University of Alabama, Mobile, 1901; member of the Medical Association of the State of Alabama; aged 57; died, June 29, of osteosarcoma of the lung and hip.

John J. Tuller, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1892; emeritus professor of neurology at his alma mater; aged 70; died, July 7, in the Hahnemann Hospital, of carcinoma of the lip.

William George Smith, Walton, N. Y.; Bellevue Hospital Medical College, New York, 1894; member of the Medical Society of the State of New York; aged 63; was accidentally drowned, July 1, while bathing.

Albert F. Klohs, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department, Ohio Wesleyan University, 1906; aged 50; died, May 29, of chronic nephritis, myocarditis and arteriosclerosis.

Harry Edwin Williams ⊕ Mount Vernon, Maine; Harvard University Medical School, Boston, 1897; past president of the Kennebec County Medical Society; aged 58; died, in April, of angina pectoris.

Isaiah Shaiah Wygodski, Saranac Lake, N. Y.; North Caucasian State University, Rostov-on-the-Don, Russia, 1920; University of Berlin, Germany, 1923; aged 39; died suddenly, June 10, of heart disease.

Thomas McClellan Wilson ⊕ Elkins, W. Va.; College of Physicians and Surgeons, Baltimore, 1892; for many years on the staff of the Davis Memorial Hospital; aged 69; died, May 22, of heart disease.

James Cox Vandiver, Baldwyn, Miss.; Memphis (Tenn.) Hospital Medical College, 1908; member of the Mississippi State Medical Association; aged 48; died, June 9, following an operation for gallstones.

Samuel Hancock, West Frankfort, Ill.; St. Louis College of Physicians and Surgeons, 1903; member of the Illinois State Medical Society; aged 57; died, June 22, following an operation for appendicitis.

Edward L. Watson, Bode, Iowa; College of Physicians and Surgeons, Chicago, 1889; member of the Iowa State Medical Society; aged 63; died, May 13, of cardiac decompensation and coronary thrombosis.

Charles Clifton Lang, Mount Lebanon, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1901; served during the World War; aged 54; died, May 31, of cardiorenal vascular disease.

Peter Juul Noer, Wabeno, Wis.; University of Michigan Medical School, Ann Arbor, 1892; on the staff of the Wabeno-Soperton Hospital; aged 68; died, June 26, of cerebral hemorrhage.

Henry Dupree Webb, Orange, N. J.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; aged 58; died, June 21, of coronary occlusion and heart disease.

John George Seidel, Warrens, Wis.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 74; died, June 19, in St. Mary's Hospital, Sparta, of uremia and chronic nephritis.

Allen Fitch, New York; Medical Department of the University of the City of New York, 1880; aged 77; died, June 29, at his summer home in Woodmere, of cerebral hemorrhage.

H. M. Thompson, Marvell, Ark.; Louisville (Ky.) Medical College, 1882; past president of the Phillips County Medical Society; aged 75; died suddenly, June 2, of heart disease.

Lewis Galen Spradley, Boonville, Ind.; Louisville (Ky.) Medical College, 1893; served during the World War; aged 60; died, July 5, in Tennyson, of meningeal hemorrhage.

Louis L. Roripaugh, Ventura, Calif.; University of Maryland School of Medicine, Baltimore, 1889; aged 69; died, March 19, of myocardial insufficiency and arteriosclerosis.

Edward Burnett Wise, Chattanooga, Tenn.; University of Louisville (Ky.) School of Medicine, 1874; formerly city health officer; aged 80; died, June 23, of mitral stenosis.

Thomas Washington Evans, Concord Depot, Va.; Medical Department of the University of the City of New York, 1882; aged 81; died, May 28, of heart disease.

Benjamin L. Applewhite, Tecumseh, Okla.; University of Louisville (Ky.) School of Medicine, 1880; Civil War veteran; aged 89; died, May 15, of acute bronchitis.

Albert Smith Dabney, Los Angeles; Homeopathic Hospital College, Cleveland, 1890; aged 77; died, April 2, in Mecca, of angina pectoris and chronic myocarditis.

Louis Michel Young, San Francisco; Rush Medical College, Chicago, 1891; aged 65; died, May 14, of arteriosclerosis, heart disease and hemiplegia.

Frederic Pitt Schultze, Portland, Ore.; Jefferson Medical College of Philadelphia, 1902; aged 52; died, April 30, of cerebral hemorrhage.

Robert A. Bennett, Dover, N. J.; New York Homeopathic Medical College, 1874; aged 86; died, June 22, of cerebral edema and arteriosclerosis.

Curtis Duane Pitts, Martinsdale, Iowa; Keokuk (Iowa) Medical College, 1891; aged 65; died, July 6, in Maxwell, of diabetes mellitus.

William J. Peddie, Gloversville, N. Y.; Albany Medical College, 1882; aged 73; died, July 9, of chronic myocarditis and arteriosclerosis.

Freeman Allen Babbitt, Pasadena, Calif.; Dartmouth Medical School, Hanover, N. H., 1882; aged 74; died, May 18, of myocarditis.

William M. Thompson, Culpeper, Va.; University College of Medicine, Richmond, 1898; aged 61; died, June 12, of heart disease.

Charles L. Bufkin, Columbia, Miss.; Gate City Medical College, Texarkana, Texas, 1906; aged 57; died, in June, of pellagra.

Henry B. Nunemaker, Reading, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1867; aged 89; died, July 3.

George T. Rowland, Martinsville, Ill.; Louisville (Ky.) Medical College, 1876; aged 78; died, June 19, of heart disease.

Frank Browne Morrill, Costa Mesa, Calif.; Dartmouth Medical School, Hanover, N. H., 1881; aged 77; died, May 8.

Correspondence

INTRA-AURICULAR PUNCTURE

To the Editor:—Dr. Yandell Henderson's comment (THE JOURNAL, July 11, p. 124) on the editorial "Intra-Auricular Puncture" (THE JOURNAL, May 30), which was largely based on my paper "Resuscitation of the Stopped Heart by Intracardiac Therapy" (*Arch. Int. Med.* **46**:553 [Oct.] 1930), is far afield from the original conclusions of the paper and the editorial.

The reception accorded the original paper in this country (*Am. Heart J.* **6**:302 [Dec.] 1930; *Canad. M. A. J.* **24**:462 [March] 1931) and abroad (*Lancet* **1**:83 [Jan. 10] 1931) and recent textbooks on heart disease (East and Bain's "Recent Advances in Cardiology, ed. 2, 1931, p. 254, and White's "Heart Disease," 1931, p. 875) have served to focus attention on the true status of the epinephrine intracardial injection therapy for the resuscitation of the asystolic heart. My paper attempted to point out that the widespread usage and popularity of epinephrine for such purposes was fundamentally based on the focal irritability engendered in the anoxemic myocardium as the result of the needle thrust. Many other substances—twelve in addition to epinephrine are described—have been used with a satisfactory outcome in about 25 per cent of the total number of cases recorded.

In all the available literature on the subject of intracardial injection, the site of the puncture has been the ventricular portions of the heart. When the chemical functions of the heart muscle are altered by asystole, a prick of a needle or any mechanic manipulation of the heart results in an extrasystolic contraction of the ventricles. Only one extrasystole may occur, as Dr. Henderson has stated. More often, unless the heart has been unalterably damaged by prolonged anoxemia, the extrasystole is followed by normal sinus rhythm. When, however, the heart has passed beyond this critical point, the single mechanical stimulus may serve to be a focus for many extrasystoles, which rapidly are converted into a paroxysmal ventricular tachycardia and then into ventricular fibrillation.

It was for this reason that the recommendation was made that the puncture be made into the auricular areas of the heart. Here the same phenomena may take place, the difference being that, whereas ventricular fibrillation is incompitable with life, auricular fibrillation is a well known and easily handled clinical entity.

The indications for such intracardial therapy are readily determined. C. Meyer, in a review of epinephrine injection therapy (*Jahrb. f. Kinderh.* **107**:76 [Sept.] 1924) divided asystole of the heart into two groups: first, that occurring in patients dying from various diseases in which no favorable outlook could be anticipated as the heart was probably affected, and, second, that seen in persons suffering from shock in one form or another with a cardiovascular system that was primarily sound and healthy. It is in the latter group that intracardial puncture is unquestionably the most successful and it is in this group of cases that epinephrine has proved to be of the utmost service to many practicing physicians.

The hazards of pericardial and cardial infections in this procedure are not outweighed by possibilities of resuscitating the stopped heart.

Intra-auricular puncture is not a complex manipulation procedure but one that is easily available to every practicing physician. In selected cases there can be no question about its life-saving potentialities. It is not to be regarded as a substitute for the older and well tried methods of resuscitation, such as those advocated by Dr. Henderson himself, but in the operating room, the doctor's office, and wherever asystole of the heart has occurred as a result of pacemaker disturbance, intra-auricular puncture may prove to be a very valuable clinical procedure.

ALBERT S. HYMAN, M.D., New York.

NARCOLEPSY

To the Editor:—In THE JOURNAL, June 6, is published a communication from Dr. Archambault referring to the article by Dr. Doyle and me, "Symptomatic Treatment for Narcolepsy" (THE JOURNAL, April 25, p. 1370).

The brief reports by Janota and Skala on the use of ephedrine were given in the discussion of a paper by Pelnar before the Prague Neurologic Society in June, 1930. This meeting was reported in the October, 1930, issue of the *Revue neurologique*, but the discussion was not indexed in that number and consequently was overlooked by us. We knew nothing of the report until our library received volume 8 of the *Quarterly Cumulative Index Medicus* early in 1931. We, of course, intended to call attention to the work of the Prague neurologists in a later report.

It seems only fair to add that our preliminary report appeared in the Proceedings of the Staff Meetings of the Mayo Clinic, Oct. 22, 1930, and that the October number of the *Revue neurologique* did not reach this country until the following month.

Dr. Doyle and I made no claim to priority, but we wish to avoid leaving the impression that we have claimed credit not due us.

L. E. DANIELS, M.D., Rochester, Minn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MENSTRUATION, CONCEPTION AND DETERMINATION OF PATERNITY

To the Editor:—I should like to ask whether menstruation can probably be prevented by intercourse three days before the expected period, and would this circumstance, if proved, be good evidence in establishing the parentage of a child. Please omit name.

M.D., North Dakota.

ANSWER.—The general belief is that a woman may become pregnant at any time in the menstrual cycle, even during the period of bleeding. This is contrary to what occurs in most animals, in which conception takes place only at certain regular periods when the animal is in "heat." During these periods ovulation takes place and conception may occur. In certain animals, as for example the rabbit, ovulation usually occurs only as the result of coitus. Within recent years grave doubt has been cast on the assertion that women may conceive at any time in the menstrual cycle. Knaus in a number of articles stoutly denies this statement and insists that healthy women who have a regular twenty-six to thirty day cycle can conceive only between the eleventh and the seventeenth day of the cycle. He maintains that such women are absolutely sterile for the first ten days and after the eighteenth day of the cycle. For women with menstrual intervals other than twenty-six to thirty days, the periods of sterility have not been worked out. Hartmann's observations in monkeys lead him to conclude that these primates are capable of fertilization for only a short period in the menstrual cycle. Regardless of this, it seems that some women at least are capable of becoming pregnant at any time in the menstrual cycle.

Usually, when conception takes place, no menstrual bleeding occurs until some time after the uterus is emptied of its contents, be it early in pregnancy or at full term. If conception can and does take place shortly before a menstrual bleeding is expected, the expected menstrual flow usually does not take place. Fertilization usually takes place within twenty-four or forty-eight hours after intercourse, because spermatozoa and especially ova are seldom capable of fertilization for a longer period than this. It is possible, however, that the menstrual bleeding may occur in spite of conception. There are many instances wherein women bleed at their regular cyclic intervals during the first or second months of pregnancy. Usually, however, the flow of blood is less than normal.

Since the circumstances in the case cannot be reduced to absolute facts, it is difficult to see how they can be used to determine the parentage of a child. Tests depending on the compatibility of blood have been advocated to determine paternity.

TOXICITY OF CINCHOPHEN AND SAFETY OF NEOCINCHOPHEN

To the Editor:—I have been using atophan for several years, mostly in grip, giving as a rule about 15 grains (1 Gm.) every three or four hours the first day and about 7½ grains (0.5 Gm.) at the same interval the next day, seldom using more than about 150 grains (10 Gm.) in all. I also give plenty of water with the atophan and often sodium bicarbonate with the water. These doses were given to adults. During my use of atophan I have been well pleased with the results that were apparently due to its administration and have seen no toxic action whatever due to its use, though occasionally a patient complained of nausea. I have read several articles recently describing the toxic effect on the liver of cinchophen and the various preparations of that drug and I have been greatly impressed with the point that if atophan or cinchophen does really cause, if only occasionally, these fatal effects the drug should be entirely excluded from use. No doubt this could be done. At present while awaiting action, great publicity should be given so that all physicians would discontinue its use. Will you please answer the following questions: 1. Do you advise the entire discontinuance of the use of atophan (cinchophen)? 2. Can you suggest a drug that will duplicate the seemingly beneficial effect which was obtained by the use of atophan? 3. Is tolysin another cinchophen preparation?

E. E. BOWEN, M.D., East Boston, Mass.

ANSWER.—1. Yes, it would be well to discontinue the use of cinchophen, or atophan, and to substitute neocinchophen for it. Even though neocinchophen owes its activity to cinchophen, it is so slightly soluble as to be almost tasteless, devoid of irritant action on the stomach, and of remarkably low toxicity. Barbour and Lozinsky (1923) administered it to dogs orally in doses up to 50 Gm. per kilogram, or 5 per cent of the animal's own weight, without producing any effect on the general condition of the animal, while the minimum lethal dose of cinchophen was found to be 1.25 Gm. per kilogram. This remarkable safety of neocinchophen is also reflected by the fact that it is practically impossible to find one undoubted case of neocinchophen liver atrophy in the literature.

3. Tolysin is the proprietary name under which the Calco Chemical Company markets its brand of neocinchophen.

If cinchophen is prescribed, it should be ordered under its pharmacopeal name and not as "Atophan," which is more expensive and is marketed with unwarranted claims. If neocinchophen is wanted it should be prescribed by its descriptive and not under the uninforming designation "Tolysin."

In view of the serious though rare poisoning from ordinary doses of cinchophen, the use of this drug should be restricted as much as possible to cases in which other non-narcotic analgetics, such as salicylates, acetylsalicylic acid or amidopyrine, have been tried and failed to give adequate relief, and in which the suffering is sufficiently great to justify the risk. Even then, it would be advisable to use neocinchophen.

SENSITIVITY TO QUININE IN MOTH SPRAY

To the Editor:—I have a patient who has known for a long time that he is sensitive to quinine and develops a skin rash after taking small doses. Recently he purchased a can of Hoover Moth Spray (made by the Hoover Vacuum Cleaner people) and sprayed his furniture, rugs and clothes. The following day he broke out with a severe dermatitis of the face and forearms. At first sight it looked like erysipelas, with a characteristic raised swollen inflamed edge hot to the touch. On closer inspection the surfaces of the rash were covered with tiny vesicles. However, aside from local burning and itching he had no other symptoms and no rise of temperature or other physical changes. He told me about using this spray and incidentally that he was sensitive to quinine. On inspecting the label I found that the spray was chiefly 5 per cent cinchona alkaloid oleate in a petroleum base. The patient was told to stay away from the things he had worn while spraying and from other objects sprayed. His rash became generalized after a few days and then began to clear and exfoliate. At the end of about two weeks he was cleared. Subsequently he put on the suit which he had used while spraying and which had been dry cleaned and promptly broke out with a new rash. The same thing happened with other articles of clothing. Even his garters caused a rash on his legs. Now for a few questions: 1. Have you had any other cases reported following the use of Hoover Moth Spray? 2. Would this not be a dangerous substance to place in the hands of a pregnant woman? 3. Do you think that the use of the word cinchona alkaloid in preference to quinine on the label might mislead other people who have a quinine idiosyncrasy as it did this patient? Please omit name.

M.D., Washington.

ANSWER.—The American Medical Association's chemical laboratory does not have in its files a statement of the composition of Hoover Moth Spray. Many of the larvicides in wide use contain some derivatives of cinchona, chiefly quinidine.

1. We have had no reports of other cases from the use of Hoover Moth Spray. Analogous situations in industry have, however, frequently led to severe dermatoses. In the leaching process of the pulverized cinchona bark, vapors reach the bodies of workers and lead to severe dermatitis, at first limited to exposed portions but later involving other parts of the body, particularly the genitalia. Manipulation of quinine in pharmaceutic work has led to this condition. Oily preparations of cinchona reaching the skin are prone to induce a dermatitis. The condition brought about by the irritating derivatives of cinchona is far more severe in relation to the amount of exposure than the usual run of chemical dermatoses. In some industrial operations, practically all workers are at some time in their work life afflicted. This is contrary to the belief that few persons are susceptible and that idiosyncrasy or an anaphylactoid state is responsible. Extended discussion may be found in

White, R. P.: The Dermatoses or Occupational Affections of the Skin, New York, Paul B. Hoeber, Inc., 1929.

Reference is also made to

Pick, Erwin: Quinine Idiosyncrasy, *Dermat. Wchnschr.* **77**: 157 (Feb. 9) 1924.

and to

The Quinine Idiosyncrasy of the Skin of Industrial Workers, *Arch. f. Hyg.* **95**: 167, 1925.

Blamoutier and Joannon: Quinine Sickness of Occupational Origin, *Rev. d'hyg.* **44**: 521 (June) 1922; abstr. *J. Indust. Hyg.* **4**, January, 1923.

2. The amounts of quinine or other cinchona extract in the respired air in work rooms or in households wherein suspension of spray exists are far lower than that likely to influence adversely the pregnant woman. It appears that minute traces of this alkaloid may provoke violent skin inflammation, but at this time there is no reason to believe that other systems or organs are acted upon.

3. It would be incorrect to label the spray "quinine," whereas in reality it contains in addition to quinine other derivatives of cinchona.

LICHEN NITIDUS

To the Editor:—I have under my observation a case of generalized lichen nitidus, a biopsy revealing the typical histologic picture. The trunk, arms and thighs are involved. In addition, the patient, a man, aged 26, has an advanced cardiac lesion, an enlarged heart with mitral stenosis and insufficiency and aortic insufficiency, well compensated, never decompensated, but subject to attacks of paroxysmal fibrillation, controlled with quinidine. Is it advisable to treat the patient with intravenous injections of sodium gold thiosulphate in the face of the cardiac lesion? If not, what mode of treatment, if any, would you advise?

LAWRENCE S. WARD, M.D., Bronx, N. Y.

ANSWER.—Lichen nitidus does not cause subjective symptoms and its only claim to importance is the disfigurement. Even in the rather widespread cases, such as the one cited, the arms are the only exposed parts involved. Most emphatically the intravenous use of sodium gold thiosulphate in a patient with heart disease is unjustifiable for so slight a dermatosis. While the condition is supposed to be related to an internal focus of tuberculosis, this relation is usually impossible of demonstration. The local use of a mild ointment containing salicylic acid and resorcinol is suggested. A zinc oxide ointment with 2 per cent of each could be used. If this fails, mild exposures, one-eight to one-fourth erythema dose once a week of roentgen rays, unfiltered, could be given, a total of two erythema doses not to be exceeded.

OBESITY AFTER CHILDBIRTH

To the Editor:—A woman, aged 30 married, weighing 140 pounds (63.5 Kg.), increased in weight to 250 pounds (113 Kg.) in less than a year after giving birth to a normal child. Thyroid was taken, beginning with 3 grains (0.2 Gm.) a day and increasing to 24 grains (1.5 Gm.) a day in three months. The large dose of thyroid was continued for six months, then reduced to 10 grains (0.65 Gm.) a day for eight months (present time). She lost about 50 pounds (23 Kg.). She is constantly tired. Do you believe she had hypothyroidism? Was the dose of thyroid excessive? What other gland therapy would you suggest? She is not under my care but will be as soon as I hear from you.

M.D., New Hampshire.

ANSWER.—It is impossible to answer the question as to the presence of hypothyroidism in this type of obesity unless basal metabolism tests are done. It is not unusual for women after childbirth to grow enormously, but the exact etiology is not always certain. Without control by basal metabolism the exact dose of thyroid cannot be determined. Thyroid can be used as long as the metabolism remains under normal or normal but should not be used after the metabolism is above normal. It is extremely doubtful whether other glandular therapy is of any value. It should be suggested that no reduction procedure should be instituted by thyroid alone, but that a careful lowering of the caloric intake of food is even more important than thyroid.

EXCESSIVE PERSPIRATION DURING PREGNANCY

To the Editor:—A married woman, white, aged 27, primipara, of normal weight and development, who is due for delivery in a few days, has complained of night sweats during the last six or eight weeks of her pregnancy. These sweats involve mostly the forehead and chest, but at times the entire body. At times they occur during her afternoon rest, and at night usually between three and five a. m. She has been well throughout her pregnancy, and at present is doing her usual household duties. There is no family history of tuberculosis. The patient does not cough and seldom takes cold. The only afternoon increase of temperature over a two weeks' checkup, was a temperature of 99 F. one afternoon when she was not feeling well. Her chest has been thoroughly checked up both physically and roentgenologically, and pulmonary pathologic conditions have not been found. Her blood pressure has ranged from 92/60 to 110/75 throughout pregnancy. She has taken viosterol, 15 minims (1 cc.), calcium lactate, 15 grains (1 Gm.), daily for the past six months. Atropine does not check the sweats. Could this be a viosterol intoxication? Please furnish me with any information you can on this case. Please omit name if published. M.D., Nebraska.

ANSWER.—Sweating during the latter months of pregnancy is uncommon but it frequently occurs during the puerperium. It is due to an increase in the function of the sweat glands, usually profuse, and generally most marked during the night. Often women wake up to find their nightgowns drenched because of the perspiration. No known treatment is of any avail, but the condition usually disappears spontaneously. Viosterol most likely is not the cause. Frequently viosterol decreases the amount of sweating by building up the patient's general condition.

BUTTERMILK NOT A DANGEROUS SOURCE OF BOVINE TUBERCULOSIS

To the Editor:—Cow's milk is boiled or pasteurized before being fed to children. How about buttermilk? It cannot be boiled. Does it present the danger of conveying bovine tuberculosis?

C. B. STONE, M.D., Arcola, Sask.

ANSWER.—The high acidity of buttermilk exerts a strong germicidal action. A number of experimenters have shown that most pathogenic bacteria are destroyed by the amount of acid present in buttermilk, and it is generally assumed that the danger of infection through this beverage is exceedingly small. On the other hand, it has been shown that tubercle bacilli are occasionally present in buttermilk offered for sale. Probably the best practice is to use pasteurized milk for preparing buttermilk. Since pasteurized milk does not sour as readily as raw milk, a commercial starter may first be used. After the process is well and safely started, seedings from one lot to another may be made.

ERYTHEMA AFTER SULPHUR OINTMENT

To the Editor:—Following the use of sulphur and lard, also other sulphur mixtures for scabies, what would be the best treatment for erythema and how should the treatment be given? A boy, aged 11, has had the "itch" since last September. The other members of the family have recovered from it, but this boy, the mother tells me, is troubled with it every three or four weeks. It goes away, then comes back. It surely cannot be the same old "itch" but a "condition" of the skin. What would be the best course to follow? Please omit name.

M.D., North Dakota.

ANSWER.—Soap should be avoided as much as possible, oatmeal or bran water being used for washing. An ointment of 10 per cent boric acid in ointment of rose water or petrolatum may be applied. If this makes the skin red and itchy, a thin coating of zinc oxide ointment may be applied.

VENEREAL WARTS

To the Editor:—I have a case of venereal warts in an unmarried woman, aged 16. The warty growths are inside the vagina and are large and numerous, being located on the floor and the right and left walls. The vaginal space is limited. I cannot introduce a small speculum. How am I to get rid of this crop of growths?

R. W. MINOR, M.D., Williams, Okla.

ANSWER.—Acuminate warts are usually due to moisture associated with a persistent gonorrheal infection. Eradication of foci of this disease in the urethra, Skene's ducts and the cervix is essential in the treatment.

Vaginal instillation of 2 or 3 cc. of a 3 per cent solution of tannic acid in glycerin may be made night and morning with the patient recumbent, the hips elevated. Every third or fourth day a cleansing soapsuds douche followed by clear water should be given under low pressure. When the condition subsides sufficiently to permit use of a speculum, hot air from a hair dryer may be given for a minute or two on alternate days. Care must be taken not to "cook" the surfaces by excessive treatment. Light therapy may also be employed, although it is usually less efficacious than the dryer. In certain instances these procedures may not suffice; surgery is occasionally necessary.

GALVANIC CURRENT FOR HEMORRHOIDS

To the Editor:—A firm manufacturing physical therapy appliances in Chicago sponsors a proctologic clinic in which a treatment of hemorrhoids with galvanic current is advocated. Kindly express your opinion as to the value of this treatment. Kindly omit name. M.D., Illinois.

ANSWER.—Treatment of hemorrhoids with the galvanic current results in a thrombosis of the varicose veins, as occurs when phenol or quinine urea hydrochloride is injected into the internal hemorrhoids. Any one of these measures is valuable only in the treatment of internal hemorrhoids. In the average patient, therefore, it is fully as safe and much surer to have a well conducted operation for the removal of hemorrhoids than to have treatment by any one of the methods mentioned.

SCOLIOSIS

To the Editor:—A woman, aged 22, who is otherwise attractive, has a scoliosis that is noticeable on fairly close observation. What can be done about it and, what is more important, whatever is done, is it really "love's labor lost"? Please omit name. M.D., New York.

ANSWER.—The questioner does not give sufficient data to enable a concise answer. The outline of treatment consists of several days' rest in bed, preferably on a curved Bradford frame. At the end of about one week comes the institution of physical therapy, especially medical gymnastics, special exercises and massage. Then comes the application of a plaster-of-paris cast in one of the various types of apparatus, such as the Hibbs frame, the Abbott machine or the Sayre suspension apparatus. Following the wearing of this cast for a variable period, depending on progress, a removable support should be made: a removable cast, a leather jacket or a turnbuckle jacket. If the patient does not maintain correction, operative fusion of the spine by one of the several methods, including the Albee, the Hibbs or modifications, should be seriously considered.

PURPURA

To the Editor:—A woman, aged 40, has had for two months purpuric spots on her legs, which tend to break down if she is on her feet much during the day. They start as minute red maculae, which spread peripherally, darken and become necrotic in the center. When first seen she had two large ulcerated areas, which healed slowly on rest in bed, but now new crops appear after walking around much. Her general health is good. There are no varicose veins. There is no history of suspicious medication, no sores or bleeding gums to suggest scurvy. The Wassermann reaction was negative twice. There is slight secondary anemia and a platelet count of 126,000. If you can give me any suggestions as to diagnosis and treatment, I would greatly appreciate it. Please do not use name. M.D., Virginia.

ANSWER.—This condition may be due to a drug reaction but, if this feature can be ruled out, one should consider a form of erythema multiforme and an essential purpura with ecthyma. Locally, one may use soothing wet dressings or a 2 per cent ammoniated mercury ointment. It may be advisable to have the patient wear an elastic stocking.

DEATH FROM ELECTRIC CURRENTS OF LOW VOLTAGE

To the Editor:—Has coming in contact with 110 volts of electricity ever caused death in an adult or a child? Does it make any difference whether the current is alternating or direct? Under what conditions could or has it caused death, and through what parts of the body must the current pass? Can 110 volts cause headache and other nervous disturbances without making a burn? Please omit name and address.

M.D., Pennsylvania.

ANSWER.—Contact with 110 volts (and even much lower, such as 75,) has led to death in many instances. Alternating currents are regarded as more dangerous than direct, other conditions being equal. Low voltage is dangerous in the presence of high amperage. Amperage is more important than voltage, in relation to shock and burns. Death almost invariably follows exposure involving 100 or more milliamperes. Bath room electrical accidents are ordinarily typical of low voltage conditions. The victim, standing in water, reaches for an electrical switch or fixture. Some defect leads to contact with the current, and disaster results. Currents passing through the thorax, involving the heart, or through the head, involving the medullary

centers, are conducive to greater damage than those not involving these areas. One hundred and ten volts may lead to headaches and nervous manifestations in several ways: (1) following intense muscle spasm when the contact is made with the head muscles; (2) following petechial hemorrhage in nerve cells or in the blood vessels of the brain; (3) following edema of the brain—lumbar puncture may be required to relieve such pain; (4) following increased blood pressure, resulting from cardiovascular damage from electricity.

RHEUMATIC FEVER AND ENDOCARDITIS

To the Editor:—My nephew, a boy, aged 14 years, has been suffering since 1928 from a rheumatic endocarditis with an aortic insufficiency, without decompensation. He was in bed for more than six months and he was under the care of one of the best cardiologists of the city. For two years he was able to go about and to attend school, but since April 1 he has been in bed again, with a light afternoon fever between 99 and 99.5 F. and a pulse rate ranging from 98 to 106. There are no signs of decompensation, no enlargement of spleen or liver, nothing on his chest, no signs of pericarditis. Electrocardiograms gave an inversion of the T wave and a predominance of the left ventricle (which is hypertrophied). There are no arrhythmias. Would you consider this a relapse of the endocarditic process and would you give the patient high doses of sodium salicylates as he was taking before? He used to take 20 grains (1.3 Gm.) four times a day without signs of intolerance. Would you keep such a patient in bed for a long time even without fever? I should appreciate your opinion or any suggestion you could give. Please omit name.

M.D., New York.

ANSWER.—The presence of the slight afternoon fever does not necessarily indicate a relapse of the endocarditic process, although this may be true. It represents perhaps a recrudescence of the rheumatic infection somewhere in the body, provided there is no other demonstrable focus or disease process that would explain the rise in temperature. The patient should be kept in bed until his temperature becomes normal, provided that is possible. He may be given moderate doses of sodium salicylate, perhaps 10 grains (0.65 Gm.) three times a day. He need not be kept in bed a long time without fever, possibly only a week or ten days after its cessation. The cardiologist may, of course, verify whether or not any additional changes are occurring in the heart.

RETINITIS PIGMENTOSA

To the Editor:—Please give me the best form of treatment for retinitis pigmentosa. Is there any treatment to check the progress of this condition? My wife has had this eye trouble for the past seventeen years, and the condition is progressively growing worse. The field of vision at present is small. The family history is negative as to any eye or blood disease. Would the taking of solution of potassium arsenite (Fowler's solution), in large doses over a long time, cause such a condition? Any information as to where any literature on this subject can be obtained will be greatly appreciated. Please omit name.

M.D., Kentucky.

ANSWER.—There is no treatment. Innumerable medical and surgical remedies have been tried by innumerable authors with spasmodic reports of success, none of which have been corroborated. Solution of potassium arsenite ran its course in the nineties but has been abandoned. At present, liver extract is the vogue, being used in about the same dosage as in a mild pernicious anemia. For rather extensive literature on the subject the reader is referred to the American Encyclopedia of Ophthalmology, volume XV, page 11367, and to the Graefe-Saemisch Handbuch der gesamten Augenheilkunde, edition 2, volume VII by Leber, pages 1076-1220, in which the bibliography up to 1916 is complete. For articles since then, reference should be made to the *Quarterly Cumulative Index* and the *Quarterly Cumulative Index Medicus.*

UNDESCENDED TESTIS WITH HERNIA

To the Editor:—I have a patient, an infant aged 3 months, who has an undescended right testicle. It is high in the inguinal canal or on the aponeurosis of the external oblique. A hernia complicates it. What is the best treatment? Should a truss be worn that will hold hernia and testicle both? Please give treatment. Please omit name.

M.D., Indiana.

ANSWER.—The best treatment for this condition is an operative correction. The undescended testicle should be operated on and placed in the scrotum. At the same time the hernia should be repaired. The age of the patient, however, must be taken into consideration. It is advisable to wait until he is 1 or 2 years old. In the meantime the hernia may be controlled with a soft truss so placed that it does not exert pressure on the testicle.

CANKER SORES AS AN ALLERGIC MANIFESTATION

To the Editor:—An otherwise apparently healthy man, aged 27, has been having canker sores in his mouth for two years. At the time of his visit there were four present, and he states that he is practically never entirely free from them. He also had an attack of shorter duration five years ago. There is no seasonal relation, but the patient states that certain foods, notably strawberries and oranges, cannot be taken at all because of their exciting effect on the production of the canker sores. The patient has had hay-fever mildly, he formerly had hives, and his mother has asthma. The individual lesions respond well to silver nitrate. The urine has a specific gravity of 1.028 and is strongly acid, the saliva is alkaline to litmus, and the nasal spaces are small because of turgescence of the mucosa and the presence of more or less inspissated mucus. The teeth are in good condition, the gums are in good condition, the tonsils are small and atrophic, and pressure over the pillars does not reveal fluid pus. The general examination is negative. Information as to the etiology and prophylaxis of this condition will be most gratefully received.

A. W. WARNOCK, M.D., San Pedro, Calif.

ANSWER.—Canker cores may be a manifestation of allergy, as noted by Beecher (*Clin. Med. & Surg.* **35**:903, 1928) and more recently by Rowe in his book on Food Allergy (Philadelphia, Lea & Febiger, 1931).

When the same patient has other allergic manifestations, including hay-fever and urticaria, and when there is a family history of allergy, the probability of his being hypersensitive to some food is definite. Skin tests to common foods may reveal the cause of trouble, or a system of elimination diets as advocated by Rowe might be well worth while. This system excludes those foods which are the most likely causes of trouble and then adds one food at a time to the restricted list according to a method of trial and error which must be carried out carefully and for a considerable period of time. The results, however, are often brilliant.

RUBELLA

To the Editor:—In our community there is an epidemic of rubella (German measles). The cases are typical and generally rather mild. I know of at least six cases in which children are having rubella now who previously have had typical attacks of rubeola and rubella. Two of the children who are having rubella now had rubella about eight months ago. How do you account for this? Are there two kinds of rubella? Another question regarding school exclusion: Take a family of four school children who (all) have had both rubella and rubeola. One child comes down with rubella again (one year later). If this new patient has not received immunity, in all likelihood the other three have also an equal chance of contracting rubella again. Should all four children be excluded from school for the incubation period to see whether any more cases will develop? I would appreciate your omitting my name.

M.D., Pennsylvania.

ANSWER.—German measles (rubella) is not infrequently confused with measles and mild scarlet fever. It is not likely that so many children as indicated are having second attacks of any of the diseases mentioned. It is not customary to restrict children exposed to rubella unless suspected of having the disease.

USE OF COLORED LIGHTS

To the Editor:—Of what value are the use of colored lights or colored slides in front of sunlamps or infra-red lamps as a therapeutic aid in underweight, nervousness, goiter and other diseases?

A. WESSERMANN, Washington, D. C.

ANSWER.—According to the available evidence, there is no clinical or experimental proof that colored lights or light transmitted through colored filters have any therapeutic or curative effect on the human being. Claims that transmitted infra-red rays through red filters to reduce burning of the skin yet irradiate the body with penetrating infra-red rays for therapeutic effect require additional experimental proof. Research, in which evidence is presented that rats grow larger under red lights, has not yet been confirmed.

FLIT TOXICOLOGY

To the Editor:—Do you have any information in regard to the composition of the insecticide "Flit"? It is said to be nontoxic to human beings. In case you are in a position to know the composition, what information is available as to the toxicology of the material used? Please omit name.

M.D., Michigan.

ANSWER.—In general, fly repellents contain extract of pyrethrum in a petroleum base; i. e., deodorized kerosene. The matter of fly repellents was discussed in Queries and Minor Notes, THE JOURNAL, Aug. 13, 1927, page 542. Such sprays when used according to directions are generally considered essentially harmless. However, severe attacks of dermatitis venenata have frequently been observed.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 8. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD OF OTOLARYNGOLOGY: Indianapolis, Sept. 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha, Neb.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, Sept. 18. Sec., Dr. Charles B. Pinkham, 420 State Office Building, Sacramento.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examinations will be held at various cities throughout the country where five or more candidates are enrolled, Sept. 14-16. Ex. Sec., Mr. Everett S. Elwood, 225 South 15th St., Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 10-11. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 8-9. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego Biascoechea, P. O. Box 804, San Juan.

WISCONSIN: *Basic Science.* Madison, Sept. 19. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee.

South Dakota January Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota Board of Health and Medical Examiners, reports the oral, written and practical examination held at Pierre, Jan. 20-21, 1931. The examination covered 15 subjects and included 105 questions. An average of 75 per cent was required to pass. Nine candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity and 2 by the endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College	(1929)	88.9, (1930)	91.1
University of Louisville School of Medicine	(1929)		88.6
University of Michigan Medical School	(1928)		89.4
University of Minnesota Medical School	(1930)	87.4, 87.8,	91.9
Washington University School of Medicine	(1927)		87.3
University of Pennsylvania School of Medicine	(1927)		89.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University School of Medicine	(1913)		Minnesota
College of Physicians and Surgeons of Chicago	(1904)		Nebraska
Northwestern University Medical School	(1929)		Iowa
Detroit College of Medicine and Surgery	(1920)		Michigan
Univ. of Minnesota Med. Sch.	(1926, 2), (1927), (1929, 3)		Minnesota

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
Yale University School of Medicine	(1927)		N. B. M. Ex.
University of Pennsylvania School of Medicine	(1925)		N. B. M. Ex.

Colorado April Examination

Dr. William Whitridge Williams, secretary, Colorado State Board of Medical Examiners, reports the written examination held at Denver, April 7, 1931. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Three candidates were examined, all of whom passed. Nine candidates were licensed by endorsement. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College	(1930)	89.4, (1931)	91.3
Osteopath			79.3

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
University of Arkansas School of Medicine	(1918)		Arkansas
College of Medical Evangelists	(1918)		California
University of Colorado School of Medicine	(1927)		Louisiana
Hahnemann Medical College and Hospital, Chicago	(1910)		Illinois
Rush Medical College	(1914)		Illinois
Indiana University School of Medicine	(1926)		Indiana
University of Kansas School of Medicine	(1929)		Kansas
Tulane University of Louisiana School of Medicine	(1928)		Louisiana
St. Louis University School of Medicine	(1929)		Missouri

Arkansas Reciprocity Report

Dr. Sam J. Allbright, secretary, Arkansas Board of Medical Examiners, reports 5 physicians licensed by reciprocity with other states from Jan. 1 to April 2, 1931. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois College of Medicine	(1905)		Illinois
Washington University School of Medicine	(1908)		Oklahoma
Meharry Medical College	(1928)		Tennessee
University of Texas School of Medicine	(1920)		Texas
McGill University Faculty of Medicine	(1927)		New York

Book Notices

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1930 WITH THE COMMENTS THAT HAVE APPEARED IN THE JOURNAL. Cloth. Price, $1. Pp. 91. Chicago: American Medical Association, 1931.

A reading of any volume of the collected reports of the Council on Pharmacy and Chemistry leaves one with a lively impression of the critical fairness with which that distinguished body exercises its function of passing on the merits of the new preparations offered by manufacturers to the medical profession. Based on its admirable set of "Rules," which are the result of more than a quarter century of experience, the Council's decisions represent at once sound medical doctrine and open minded fairness to the manufacturer. If a given product is worthless, no words are minced in saying so; if it could be made acceptable, the manufacturer is shown what is necessary to accomplish this.

That the Council's rules do not operate to create a hidebound inflexible conservatism is shown by the critical open-mindedness of its preliminary reports on preparations which, while showing promise, are not yet sufficiently backed by clinical or pharmacologic evidence to warrant acceptance. Such reports in this volume are those on Avertin, Undulant Fever Bacterial Vaccine, and Ventriculin. The last named has subsequently been accepted.

The Council's willingness to acknowledge the failure of previously accepted preparations to fulfil the promise it was thought they possessed is shown by such reports as those in this volume rescinding the acceptance of antistreptococcus serums, desiccated ovarian and desiccated pituitary preparations, and pneumococcus and pertussis vaccines.

Among the reports recording outright rejection are those on Avesan (H), formerly Nuforal, a mixture stated to be composed of sodium nucleinate, camphor, allyl sulphide and chlorophyll, with traces of salicin and sulphuric ether, marketed with unwarranted claims of usefulness in the treatment of tuberculosis, asthma, and other respiratory diseases; Ceanothyn, once before rejected and still found to be marketed with unsupported therapeutic claims; Collosol Calcium and Collosol Kaolin, so-called colloidal preparations, the former an unscientific mixture of unproved value, the latter a possibly dangerous preparation, and both marketed with unwarranted therapeutic claims; Ephedrol with Ethylmorphine Hydrochloride, an unscientific ephedrine preparation, marketed under an unacceptable proprietary name with unwarranted therapeutic claims; Farastan, an unscientific iodine-cinchophen preparation proposed for routine use in "arthritis . . . and Rheumatoid conditions"; Haley's M-O Magnesia-Oil, a magnesia magma and liquid petrolatum mixture in fixed proportions, marketed with emphasis on the "M-O"; Lydin, a testicular extract, marketed with claims of value in the treatment of impotence, and Metatone, a shotgun "tonic" mixture, marketed under a proprietary name with unwarranted therapeutic claims.

NEW AND NONOFFICIAL REMEDIES, 1931, CONTAINING DESCRIPTIONS OF THE ARTICLES WHICH STAND ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION ON JANUARY 1, 1931. Cloth. Price, $1.50. Pp. 481. Chicago: American Medical Association, 1931.

Each year the Council on Pharmacy and Chemistry considers a large number of preparations, reviews the status of articles already accepted, and presents in the successive editions of this volume a reliable guide to the new and nonofficial preparations worthy of consideration and use by the medical profession.

Before a preparation can be admitted to this book it is required that its qualitative and quantitative composition be declared, that the therapeutic claims made for it be truthful, and that it have or give promise of having real therapeutic value. To be retained in the book, a preparation must be advertised truthfully and maintain the promise of therapeutic value that it gave at its acceptance. The Council judges these matters by a set of "Rules," which appear in the first part of the volume and which will repay reading by those interested in the pharmacology, therapeutic use or manufacturing of drugs.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion

of the group. Thus the silver preparations, the iodine preparations and the biologic products are described together and each group is preceded by a thoroughly up to date general discussion. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations supplant.

A glance at the preface of this volume shows that the book has been extensively revised. In fact, each edition of New and Nonofficial Remedies is essentially a newly written book, brought down to date by those who speak with authority on the various phases of therapeutics.

The book is carefully and elaborately indexed. Valuable reference material is contained in the index to distributors and in the bibliographic index, which gives references to published articles on preparations that have not been accepted.

KONINKLIJKE AKADEMIE VAN WETENSCHAPPEN (AMSTERDAM). INTERNATIONALE CIRCUMPACIFISCHE ONDERZOEK COMMISSIE (I. C. O.—COMMISSIE). THE HISTORY AND PRESENT STATE OF SCIENTIFIC MEDICAL RESEARCH IN THE DUTCH EAST INDIES. By P. C. Flu. Paper. Pp. 68, with illustrations. Amsterdam [n. d.].

Medical research in the Dutch East Indies dates from 1629, when Jacobus Bontius was appointed doctor, apothecary and surgical supervisor. Bontius described beriberi, particularly the dry form, clearly and recognized syphilis and yaws. Flu lists the works of Bontius and other pioneers. Only after the middle of the nineteenth century, however, as a result largely of the stimulus of Pasteur, Patrick Manson and Laveran, was the study of disease in the Dutch East Indies placed on a scientific basis. In 1887 a pathologic and anatomic laboratory was established with Christiaan Eijkman as director. In 1891 a Pasteur institute was opened. Flu traces the close connection in early days of scientific research with the medical services. Vaccination was introduced in Java as early as 1802. In 1910 an independent civil medical service was established, which deals particularly with public health. The monograph gives a short sketch of the development and achievements of the various departments of this service, together with lists of publications.

THE BIBLIOGRAPHY OF SCHISTOSOMIASIS (BILHARZIASIS), ZOOLOGICAL, CLINICAL AND PROPHYLACTIC. By Mohamed Bey Khalil, M.D., Ph.D., M.R.C.P., Professor of Parasitology, Faculty of Medicine, Cairo. The Faculty of Medicine, Publication No. 1. Paper. Price, 6/–. Pp. 506. Cairo: Egyptian University, 1931.

One year after joining the staff of the School of Medicine at Cairo, Egypt, in 1850, Bilharz discovered a blood fluke (*Schistosoma haematobium*) in the mesenteric veins of a cadaver. The hematuria due to this parasite is often designated bilharziasis in medical writings. It has been endemic in the Nile valley since earliest times, as ova of the parasites have been demonstrated in mummies dating from 1220 B. C. This bibliography is monumental in character and reflects great praise on its author for the effectiveness and completeness with which the work has been carried out. The first section consists of an alphabetical index of authors, embracing some 5,000 titles. This is followed by an analytic subject index that is admirably organized and includes full data on clinical, pathologic and prophylactic publications. A rapid check of the material recorded in various sections showed that American articles were well covered and disclosed no errors or omissions. All students interested in this field are indebted to Dr. Khalil for his services in placing this valuable record at their command.

CLINICAL ELECTROCARDIOGRAPHY. By Sir Thomas Lewis, M.D., F.R.S., D.Sc., Physician of the Staff of the Medical Research Council. Fifth edition. Cloth. Price, 8s. 6d. Pp. 128, with 107 illustrations. London: Shaw & Sons, Ltd., 1931.

This little monograph still holds a leading place as a guide to clinical electrocardiography, though there are today several excellent rivals some of which are more complete. Its continued popularity is due largely to the fact that the author has the ability to express himself in a manner that is clear, concise and exact. He makes even an abstruse subject seem simple and easily understandable. Moreover, the reader feels assured that the statements of the book are scientifically accurate; Sir Thomas Lewis is an acknowledged world-wide authority in cardiology. This edition follows the fourth at an interval of two and a half years. While the book is essentially a reprint, there has been some revision. Thus it is seen that on page 30 the figures that were formerly described as illustrating right and left bundle branch block are now shown as indicating "defective conduction in a division of the auriculoventricular bundle." In a footnote on page 28 it is explained that it is at present debatable which form is to be regarded as the levogram and which the dextrogram. Purchasers of the book will do well to note that it is concerned with clinical features only. Theoretical and controversial matters are not included.

DIAGNOSTIC METHODS AND INTERPRETATIONS IN INTERNAL MEDICINE. By Samuel A. Loewenberg, M.D., F.A.C.P., Associate Professor of Medicine, Jefferson Medical College. Second edition. Cloth. Price, $10. Pp. 1032, with 547 illustrations. Philadelphia: F. A. Davis Company, 1931.

The first edition of this book was reviewed in THE JOURNAL, Sept. 7, 1929. In view of the stupendous task of covering the fields of history taking and physical examination of the entire body, with a description of all that may be encountered in the various portions of the body, together with material on the endocrinology and diseases of the nervous system which were included in the first volume, it was believed that the subjects were too briefly considered with the exception of the discussion on the technic of history taking and examination. In the present edition, new material has been incorporated on coronary thrombosis, massive pulmonary collapse, agranulocytic angina, sickle cell anemia, acute mononucleosis, hypertension and hypotension, von Jaksch's anemia, the cardiac blood supply and innervation, and the diagnostic importance of the examination of certain conditions in the cerebrospinal fluid. There have been also some subtractions. The author, in preparing the present edition, kept in mind the criticisms of the previous one.

VERLAUF DER WICHTIGSTEN KNOCHEN- UND GELENKERKRANKUNGEN IM RÖNTGENBILDE. EINE ANSCHAULICHE PROGNOSTIK. Von Privatdozent Dr. med. Victor Hoffmann, Oberarzt der chirurgischen Universitätsklinik im Augusta-Hospital zu Köln. Mit deutschem und englischem Text. Paper. Price, 66 marks. Pp. 264, with 584 illustrations. Berlin: Julius Springer, 1931.

The arrangement of the illustrations and the illustrations themselves are well done. The progress of destruction of tissues as well as regeneration is followed in an enlightening manner and the progress of the disease condition can be followed at a glance rather than by reading a long description of the condition. The description of the disease, which is given at the beginning of each chapter, is concise, accurate and instructive. The footnotes are well to the point. As a constructive criticism, a little more of the therapy used in each case should be introduced in the foot notes. This work will benefit any one who is devoting his time to diagnosis and treatment of disease by the use of the x-rays.

MALARIA. Door Dr. Denis Mulder. Boards. Pp. 93, with illustrations. The Haag: G. C. T. Van Dorp & Co., 1931.

The theory is advanced that the freedom of the plateaus of Bandoeng (Java) from autochthonous malaria is to be explained by the therapeutic action of the tropical sunlight. Some of these places abound in permanent bodies of water. There is also a considerable amount of malaria brought into the region. However, no new cases of malaria occur. It is pointed out that tropical sunlight contains a large amount of ultraviolet radiation and that the tropical plateaus receive a wealth of it. Successful therapeusis of malaria by ultraviolet rays is claimed. The author believes that this opens the way to the successful control of malaria. Two of the original reprints on radiation therapy by the author are included within the front cover.

THE CRIMINAL, THE JUDGE, AND THE PUBLIC: A PSYCHOLOGICAL ANALYSIS. By Franz Alexander, M.D., Visiting Professor of Psychoanalysis at the University of Chicago, and Hugo Staub, Attorney at Law, Berlin. Translated from the German by Gregory Zilboorg, M.D., Bloomingdale Hospital, White Plains, New York. Cloth. Price, $2.50. Pp. 238. New York: Macmillan Company, 1931.

Much has been said and written concerning the need to treat the criminal rather than his crime. This book presents in strikingly clear and lucid language a psychoanalytic conception of the meaning of much that is called crime. Not only does it indicate the value of such studies for understanding many antisocial acts, but it also offers much in the way of the practical handling of these problems. The authors suggest a practical

classification of criminals into three groups: (1) the neurotic criminal, whose crime has an origin in conflicts of the personality similar to those that underlie the psychoneuroses; (2) the normal criminal, who has adopted consciously standards of behavior, not founded on conflicts in the personality, that are at variance with those of society, and (3) the criminal by reason of some organic disease or defect of the nervous system. The book deals in the main with the criminals included in group 1, for an understanding of whom methods of psychoanalytic study are needed; actual case studies are cited in illustration. One might wish perhaps that the authors had selected at least one illustrative case in which the nature of the crimes was not so obviously bizarre and unintelligible on the basis of the manifest facts. A study of the facts reported renders it manifest that the psychiatrist must assume an ever increasing rôle not in the trial and conviction but rather in the formulation of the so-called sentence and treatment of the criminal. The book can be unreservedly recommended to the thoughtful study of physicians interested in the scientific development of criminology.

THE PREVENTION OF DISEASE IN THE COMMUNITY. By Curtis M. Hilliard, Professor of Biology and Health, Simmons College, Boston. Cloth. Price, $1.75. Pp. 193, with 25 illustrations. New York: McGraw-Hill Book Company, Inc., 1931.

A sincere attempt to popularize public health is to be commended. This book is intended to accomplish such a purpose. It is a well designed and executed description, in ordinary language, of the principles and methods of community hygiene. From a strictly scientific standpoint some of the statements might be criticized, such as those found under the discussion of common colds. Some omissions, such as reference to diphteria toxoid, the use of tetanus antitoxin, or the Mantoux test for tuberculosis, may cause criticism. It must, however, be realized that in a book of this character it is better to be a little behind the times than to include material on which opinion may change almost before the book can be published. The author has done a good piece of work, and it is hoped that the book will find its way to the intelligent reading public, which can learn many practical lessons, not the least of which is that a small community is just as much in need of good health work as is a large city.

WHAT THE HOSPITAL TRUSTEE SHOULD KNOW. By John A. McNamara, Executive Editor of the Modern Hospital. Cloth. Price, $1.50. Pp. 83. Chicago: Physicians' Record Company, 1931.

The writer has a clear conception of both the positive and the negative qualities of hospital trustees and has expressed them in unmistakable terms. Every person who assumes the duties of a hospital trustee should read this little book carefully and thus familiarize himself with the best methods of serving the interest of the hospital. There is much in the book that applies with equal force to the hospital superintendent. The author has had extensive experience in hospitals and has acquired an excellent appreciation of the psychology of those attempting the positions dealt with.

ATLAS CHIRURGISCH-PATHOLOGISCHER RÖNTGENBILDER. Von Professor Dr. Rudolf Grashey, Direktor des Röntgen- u. Licht-Instituts der Universität Köln. Lehmanns medizinische Atlanten, Band VI. Third edition. Cloth. Price, 30 marks. Pp. 243, with 635 illustrations. Munich: J. F. Lehmanns Verlag, 1931.

Volume VI of these well known medical atlases has been difficult to obtain in the last few years. The photographic reproductions are made by a special process devised by Groedel and are unsurpassed in the clarity of details. One must see the reproductions to appreciate them. In general, the author has followed the scheme adhered to in the former editions. Considerable new material has been added to the text and older material has been revised. The first chapter contains the text. It deals first with foreign bodies. The author draws freely on his vast practical experience in this field. The various methods of the localization of foreign bodies are discussed in detail and illustrated with many accompanying sketches. The chapter on concretions covers a few pages, sufficient to form the important points of difference. Reference is made in the text to the photographic reproductions in the second part of the volume. This holds true also for all other discussions. Considerable space is devoted to diseases of the bones and joints and to deformities. The other subjects discussed and accompanied by elucidating sketches are tumors, pathologic conditions of soft tissue, and dislocations. Much space is devoted to fractures. The second chapter contains the photographic reproductions of various pathologic processes. The accompanying text briefly points to the important abnormality of the reproduction. A particularly valuable feature of this book is that it leaves no doubt as to the location of early pathologic changes, which might otherwise be easily overlooked. Arrows and figures are used to point out pathologic changes and anatomic landmarks. It is necessary, of course, for all who use the atlas to be familiar with medical German; but there is no question that a roentgenologist capable of following the text will be delighted with it.

THE EMBRYOLOGY OF THE PIG. By Bradley M. Patten, Associate Professor of Histology and Embryology, School of Medicine, Western Reserve University. Second edition. Cloth. Price, $3.50. Pp. 327, with illustrations. Philadelphia: P. Blakiston's Son & Company, 1931.

The facts and theories of embryology that appear at present to be of particular significance for the medical student are presented in an interesting and dynamic form. The author has made important contributions to the history of development in the pig, and the story is complete in its general outlines. In addition, much may be said in favor of basing a textbook on the only mammalian species that is readily available for class study, especially when the laboratory work is made the major part of the course. Attention is called to the principal differences in development between man and the pig. This edition has few except verbal changes over the first, except that the excellent chapter on the vascular system has been somewhat expanded.

THE TREATMENT OF BEHAVIOR DISORDERS FOLLOWING ENCEPHALITIS: AN EXPERIMENT IN RE-EDUCATION. By Earl D. Bond, M.D., Physician-in-Chief, Department for Mental and Nervous Diseases, Pennsylvania Hospital, and Kenneth E. Appel, M.D., Psychiatrist to the Department for Mental and Nervous Diseases, Pennsylvania Hospital. Cloth. Price, $1.75. Pp. 163. New York: Commonwealth Fund, Division of Publications, 1931.

Among the new problems confronting the medical profession and the public in connection with epidemic encephalitis, one of the most puzzling arose in connection with postencephalitic behavior disorders in children. Here was a new type of child and a most exasperating one—not feebleminded or insane, not plainly criminal, one not suitable to any kind of previously existing medical, educational or corrective institution. The problem has been met in the states of New York and Pennsylvania by the establishment of a special type of school, and in this volume are reported the good results obtained in the Pennsylvania school.

ESTUDIOS DE CLÍNICA MÉDICA. Por J. C. Mussio Fournier. Cloth. Pp. 347, with illustrations. Montevideo: "Casa A. Barreiro y Ramos," 1930.

Neurologic conditions in myxedematous individuals are discussed: optic neuritis, facial paralyses and hemiplegias. Extensive electrocardiographic studies in hypothyroid patients with cardiac involvement are presented. Other clinical observations, including meningitis of typhoid origin and Friedreich's disease in association with epidemic encephalitis, are described. The book is an excellent collection of clinical material, presented interestingly and including many references to the literature. It should be of assistance to the practitioner.

OXFORD MONOGRAPHS ON DIAGNOSIS AND TREATMENT. Edited by Henry A. Christian, M.D., Sc.D., LL.D., Hersey Professor of the Theory and Practice of Physic, Harvard University. Vol. X: The Diagnosis and Treatment of Pneumonia. By Campbell P. Howard, B.A., M.D., C.M., Professor of Medicine, McGill University. Cloth. Price, $100 per set of 10 volumes. Pp. 263. New York: Oxford University Press, 1931.

This is a contribution on pneumonia by the professor of medicine at McGill University. It is, as have been previous volumes of this series, succinct, well written, handsomely printed and quite up to date. The views of Dr. Howard as to serum treatment are of especial interest. He reviews fully the work of Cole, of Kyes, of Huntoon and of Felton. He believes that unquestionably the serum exerts an influence on the disease. The case for the Kyes method is not considered as established. The

value of the Huntoon preparation is called to question because of the severe thermal reactions; there seems to be some evidence of benefit in some cases. The author is most enthusiastic about the Felton preparation and urges its use in pneumonia without exception as to type, provided the patient is seen within the first three days of the disease.

NEUE WEGE DER BLUTDRUCKMESSUNG. Fünf Abhandlungen über Blutdruck und Puls in den grossen Arterien des Menschen. Von Heinrich von Recklinghausen. Paper. Price, 12 marks. Pp. 289, with 82 illustrations. Berlin: Julius Springer, 1931.

This investigator has thoroughly studied the principles and significance of blood pressure measurement. He has particularly gone into the study of oscillometry, expounding the various phases of a blood pressure curve. For the more accurate study of blood pressure phases and the contour of the impulses in these phases von Recklinghausen presents a new instrument, the gryptonograph. This apparatus appears compact and practical for office use. Many case reports are appended to present the clinical value of the instrument and the methods employed. In addition, studies are presented comparing phases of simultaneous pressure in the four extremities and variations under physiologic and pathologic conditions. This book should serve as an excellent introduction to the subject. The printing and illustrations are good. The references include the most important contributions to date.

CLINICAL DIAGNOSIS BY LABORATORY METHODS: A WORKING MANUAL OF CLINICAL PATHOLOGY. By James Campbell Todd, Ph.B., M.D., and Arthur Hawley Sanford, A.M., M.D., Professor of Clinical Pathology, University of Minnesota (The Mayo Foundation). Seventh edition. Cloth. Price, $6. Pp. 765, with 347 illustrations. Philadelphia: W. B. Saunders Company, 1931.

In preparing the previous edition of this book, Dr. Todd, who since then has passed on, found it necessary to request the help of an associate. Dr. Sanford has carried forward the work under the same general plan. The book is primarily a textbook for students, but the requirements of the laboratory have also been met. Several obsolete laboratory methods have been omitted and new procedures have been added. These include Clark and Collip's method of determination of calcium; the technic of the Keith, Rowntree and Geraghty method of determining blood and plasma volume; Corper and Uyei's method of cultivating the bacillus of tuberculosis; Fairhall's method for the determination of lead; Folin's recent method for the precipitation of protein from body fluids; his modified method of determining uric acid in the blood, and his revised copper solution for the determination of blood sugar. There is a discussion of the Aschheim-Zondek test for pregnancy and of Gregersen's test for occult blood. This edition includes descriptions of how to prepare a number of solutions for intravenous use and more liberal references to the literature in the footnotes. The make-up and appearance of the book are the same as in previous editions.

THE VITAMINS. By H. C. Sherman, Mitchell Professor of Chemistry, Columbia University, and S. L. Smith, Senior Chemist, Office of Experiment Stations, United States Department of Agriculture. American Chemical Society Monograph Series. Second edition. Cloth. Price, $6. Pp. 575, with 14 illustrations. New York: Chemical Catalog Company, Inc., 1931.

This is a comprehensive treatise on the vitamin, summarizing information on the chemical nature of the individual vitamins, their rôles in life processes, their formation and distribution in nature, their relative abundance in different types of foods and stability under various conditions. The more important knowledge concerning each vitamin is segregated in separate chapters including the chronological development of information regarding them, their physiologic properties, their relation to nutrition and health and their quantitative determinations. The physiologic, pathologic, nutritional and health aspects of the subject are treated with the interests of all probable readers in view. The bibliography is brought to the middle of 1930 and includes practically all the important literature. For convenience of reference in future editions, tabulation of definitions explaining the recognized units of the respective vitamins and the relative potencies of common foods might well be appended. The authors have contributed a monumental work in the development of the research and science of the vitamins.

Medicolegal

Myeloma Attributed to Trauma

(Loveless v. Red Top Cab Co. (Wash.), 291 P. 344)

Loveless was injured by a taxicab operated by the defendant company. He instituted suit for damages but died before the case was tried. His wife, as administratrix, was substituted as plaintiff. The trial court gave judgment in her favor, which judgment was affirmed by the Supreme Court of Washington.

Prior to the accident, Loveless was in good health. The injuries complained of were received, Aug. 6, 1928. Loveless, while crossing the street, was struck by a taxicab, the front fender hitting him in the lower part of the back. He fell on the fender and then to the street. He was taken to a hospital, where he remained for two or three days. He continued under the care of a physician, however, for three or four months. About three weeks after the accident, his health began to fail. About a month after the accident, pain developed in the lower part of his back. This became more acute as time went on and was attributed by his physicians to arthritis of the spine. About the middle of December a roentgenogram showed a slight mottling or coloring in the lower spine. From the time when his health began to fail, three weeks after the accident, his condition grew gradually worse, and for three or four months prior to his death he was confined to his room and most of the time to his bed. April 13, 1929, he developed pneumonia. He died three days later. An autopsy showed a myeloma in the lower part of the spine.

A physician testifying for the plaintiff stated unequivocally that in his opinion the myeloma was caused by the accident. Another physician, also testifying for the plaintiff, felt confident that the injury at the very least predisposed to the development of the myeloma and was a factor in its causation. Physicians called by the defendant testified that the myeloma was not caused by the accident. Taking into consideration the history of the case, said the Supreme Court, together with the evidence of the two physicians who testified for the plaintiff, there was substantial evidence to take to the jury the question whether the myeloma was or was not caused by the accident.

Physicians called by the plaintiff testified that the primary cause of death was the myeloma and that the pneumonia was the terminal cause. Physicians called by the defendant testified that the pneumonia was the primary and proximate cause of death. From what was disclosed by the autopsy, it was apparent that death was rapidly approaching even if pneumonia had not appeared. Whether death was caused proximately by the myeloma or by the pneumonia was a question of fact to be determined by the jury. Where the original act is wrongful and would naturally in the ordinary course of events produce death, as the jury had a right to find in this case, the occurrence of pneumonia as the terminal cause does not relieve the defendant from liability.

Malpractice and Podalic Version

(Ropp v. Stevens (Va.), 154 S. E. 553)

The appellee, Stevens, anticipating her confinement, employed the appellant, Ropp, a practicing physician, to attend her. In this suit she alleged that she was injured by his negligence in the course of a forcible delivery and by his failure to give her proper medical and surgical attention thereafter. The trial court gave judgment for the patient. The physician brought error to the Supreme Court of Appeals of Virginia, where the judgment against him was affirmed.

Evidence as to whether the physician paid any attention to his patient between the time when his services were first engaged and the time of delivery was conflicting. Delivery occurred, Oct. 27, 1926, and was expected about that date. The patient testified, however, that she had had no pain and did not send for the physician. Neighbors or friends seemed to have summoned him. At his first visit, the physician, after making a physical examination, told his patient that something was not right. The patient continued to bleed after his departure, until 4 o'clock in the afternoon, when she had the physician summoned

again. He did not arrive until about half past 6. Then he administered chloroform, and the child was delivered while the patient was unconscious. It was explained by the physician that the case was one of shoulder presentation and that he necessarily performed podalic version. After delivery, according to the patient's testimony, she had chills and fever for several days and later became ill, nervous, continued to suffer pain, and became practically an invalid. She consulted other physicians. They found lacerations and a relaxation of the perineum, a badly torn cervix, a fallen uterus, and pus in the fallopian tubes. After the lacerations were repaired, the adhesions corrected, and the tubes removed, she recovered her health. The physician who had attended the patient at the birth of her previous child testified that there were no lacerations and injuries after that birth, such as were found after the delivery of her second child in the manner described in this suit.

The appellant, the attending physician in this case, after explaining the necessity for podalic version and the manner of performing it, said that he visited his patient for three or four successive days after her delivery. He told her, he said, to consult him within six weeks or two months for further examination, but that she did not do so. The patient denied having received any such instruction. It was shown that the course covered by such instruction was the approved and better practice of physicians in the community.

Physicians, said the Supreme Court of Appeals, do not and cannot guarantee successful results. They owe their patients only ordinary, but expert, care, attention and skill, such as is usually exercised by reputable physicians in similar cases. They can be held responsible only in cases in which their patients suffer because of the physicians' negligence. A patient cannot recover damages simply because he does not get well, and, where actionable negligence is alleged, it must be established by the evidence. Under our system of jurisprudence, questions of fact such as were presented by the issues raised in this case must be submitted to a jury, whose verdict is conclusive if fairly supported by the evidence. The record in this case was sufficient to support the conclusions of the jury that the patient's injuries resulted from the forcible delivery of her second child and that she was not given proper medical and surgical attention thereafter. The trial court committed no error in refusing to set aside the verdict.

Insurance: Misrepresentation of Prior Health.—A Kansas statute provides that misrepresentation made in obtaining a life insurance policy shall not be deemed material unless the matter misrepresented actually contributes to the event on which the policy becomes due and payable. The insured, in his application for life insurance, falsely represented that he had not consulted a physician or suffered from any disease of the stomach, intestines, liver, kidneys or bladder. The application provided that the policy should not become effective if the applicant consulted a physician after his medical examination and before the delivery of the policy. The insured did consult a physician in the interval stated, for a "very serious disease of the bladder." He died from "a blood clot on the brain." The insurer brought suit to cancel the policy because of the fraud and misrepresentation practiced in obtaining it and because of the consultation after the medical examination and before the delivery of the policy. The United States District Court, District of Kansas, Second Division, held that the Kansas statute relative to the materiality of misrepresentations was not applicable. A contract of life insurance, the court said, is one of indemnity against the hazard of the death of the insured happening from any cause. An insurance company, before assuming a risk, has a right to ask any pertinent question affecting the risk to be assumed and has a right to a fair and truthful answer to any such question asked. The company has a further right to decline to enter into an insurance contract if the insured consults a physician for any impairment of his health subsequent to his medical examination and prior to the delivery of the policy. If answers materially affecting the risk assumed are not true, or if the policy is delivered in violation of a condition therein imposed, the policy is not binding even if death is caused by an entirely independent happening, such as a stroke of lightning or accidental drowning. The contract is either valid or invalid when formed. Nothing thereafter occurring, such as the cause of the subsequent death of the insured, can affect the determination of that question.—*Hurt v. New York Life Ins. Co. (U. S. D. C.), 41 Fed. (2d) 392.*

Evidence: Expert Testimony Invading Province of Jury.—Maroney was convicted of an assault with intent to commit murder. He appealed to the Court of Criminal Appeals of Texas, where the judgment was reversed and the cause remanded. In the trial court, the state placed a physician on the witness stand and elicited from him that he had examined a knife wound on the injured person, Bremer. Then the district attorney asked the witness, "In your opinion, of the experience you have had in examining knife wounds, could such a wound have been inflicted by a person falling on a knife?" Counsel for the defendant objected on the ground that the matter inquired about was not a proper subject for expert testimony but a question of fact for the jury. This objection was overruled, and the physician answered the question in the negative. The defendant contended that he did not attack Bremer with a knife, but that Bremer had threatened him with a knife. He believed that he and his family were in danger at Bremer's hands and therefore he got a shotgun and fired at Bremer to stop him, but with no intention of killing him. Bremer, the defendant contended, fell on his own knife. It will be seen, said the Court of Criminal Appeals, that the opinion testified to by the physician affected a vital issue. Although he was not present at the time of the altercation, he was permitted in effect to testify as to the relative positions of the defendant and the injured person at the time of the affray. Maroney's guilt or innocence depended on the issue of self-defense, and the determination of this issue against the defendant was aided by the physician's opinion. It is the general rule, said the court, that neither a nonexpert nor an expert witness may thus be permitted to give an opinion on the very issue the jury is impaneled to try and about which the jurors are as well qualified to speak as the witness.—*Maroney v. State (Texas), 29 S. W. (2d) 772.*

Pharmacy: Refusal of Board to Renew Certificate Because of Conviction of Violation of the National Prohibition Act.—A state board of pharmacy does not abuse its discretion when it refuses to renew a certificate to practice pharmacy, of an applicant who has pleaded guilty to charges of feloniously conspiring to violate the National Prohibition Act and aiding to defraud the federal government of sums of money accruing as taxes on whisky diverted to beverage purposes and who has been committed to federal prison by reason thereof.—*State Board of Pharmacy v. Gafford (Ohio), 173 N. E. 192.*

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, French Lick, Indiana, September 14-19. Dr. William P. Wherry, Medical Arts Building, Omaha, Executive Secretary.

American Academy of Physical Therapy, Montreal, September 3-4. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pa., Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, White Sulphur Springs, W. Va., September 14-16. Dr. M. A. Tate, 19 West Seventh Street, Cincinnati, Secretary.

American Public Health Association, Montreal, September 14-17. Dr. Kendall Emerson, 450 Seventh Avenue, New York, Acting Executive Secretary.

Colorado State Medical Society, Colorado Springs, September 15-17. Mr. Harvey T. Sethman, Metropolitan Building, Denver, Executive Secretary.

Idaho State Medical Association, Boise, September 29-30. Dr. Harold W. Stone, 105 North Eighth Street, Boise, Secretary.

Indiana State Medical Association, Indianapolis, September 23-25. Mr. T. A. Hendricks, 23 East Ohio Street, Indianapolis, Executive Sec'y.

Kentucky State Medical Association, Lexington, September 7-10. Dr. Arthur T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Pontiac, September 22-24. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

National Medical Association, Atlanta, Ga., August 17-21. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, N. J., Secretary.

Pacific Association of Railway Surgeons, Yosemite Valley, August 28-29. Dr. W. T. Cummins, Southern Pacific General Hospital, San Francisco, Secretary.

Pacific Northwest Orthopedic Association, Vancouver, British Columbia, September 5. Dr. Charles McClure, 322 Alder Street, Portland, Ore., Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Wisconsin, State Medical Society of, Madison, September 9-11. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

41: 1009-1264 (May) 1931

*Scarlet Fever: Results of Experimental Research. T. Toyoda, J. Moriwaki, Y. Futagi and C. Kuroi, Dairen, Manchuria.—p. 1009.

*Tuberculosis in Infants and in Children: White Blood Cell Counts; Evaluation of Monocyte-Lymphocyte Ratio by Supravital Staining Method. B. M. Hamil, Detroit.—p. 1023.

Acid-Base Equilibrium of New-Born Infants: Normal Standards. L. A. Hoag and W. H. Kiser, Jr., New York.—p. 1054.

*Cholesterol and Edema: Relationship in Group of Children Presenting Nephrotic Syndrome. J. K. Calvin and A. H. Goldberg, Chicago.—p. 1066.

*Effect of Elementary Phosphorus in Rickets. A. F. Hess, New York.—p. 1081.

Gastric Analysis in Childhood. H. Dietrich and D. C. Shelby, Los Angeles.—p. 1086.

Dried Powdered Milk Preparations Used in Feeding of Infants: Bacteriologic Study. J. Giblin and J. H. von Pourtales, New York.—p. 1100.

Scarlet Fever.—Toyoda and his collaborators immersed a sterile cotton swab in an emulsion of hemolytic streptococci cultured in dextrose bouillon and on an agar slant and then rubbed it directly over the throats of eight persons. Subjects 1 to 5 were experimented on with old strains of hemolytic streptococcus. The test was made during midsummer. The health of these subjects had been watched for one or two weeks preceding the experiment. For the other subjects (6 to 8), new strains of hemolytic streptococcus were used. The experiments were performed early in the winter, and the condition of the subjects had been watched for a long period. It was ascertained that they had not come in contact with scarlet fever. Subjects 1 to 5, experimented on with old strains of the hemolytic streptococcus, were placed under surveillance for several weeks, but all gave negative results. One of them had a sore throat but neither fever nor rash. The other four patients showed no change. Subjects 6 to 8, experimented on with new strains of the hemolytic streptococcus, gave positive results. Although the degree of fever and rash varied, all cases could be considered as scarlet fever. From the new streptococcus strains of the third and fourth generations, placed in a shaking apparatus for two days, the filtrate was prepared according to Zlatogoroff's method; one part of the filtrate was put in the Noguchi-Tarozzi culture mediums for incubating the filtrable microbes, while the other part was immediately applied to the throats of children having a high susceptibility to scarlet fever; no change could be observed. In the authors' opinion, this fully demonstrates that scarlet fever infection is caused, not by the filtrable body attached to the scarlatinal hemolytic streptococcus, but by the scarlatinal hemolytic streptococcus itself.

Tuberculosis in Infants and Children.—According to Hamil, the supravital technic offers a simple, accurate method for the thorough laboratory study of the white blood cells in any disease. However, since the total number of monocytes and the total number of lymphocytes are the significant factors in tuberculosis in children, a study of the cells by a fixed smear method of equal reliability will serve to supply the information desired.

Cholesterol and Edema.—From a review of the literature and from personal experimental observations, Calvin and Goldberg conclude that the blood cholesterol level in the nephrotic syndrome is practically always considerably elevated above normal and probably does not return to normal for years, even though edema may be absent for long periods. Although the cholesterol remains above normal even during edema-free periods, it has a tendency to rise and fall with the increase and decrease of edema. Exceptions to this are not uncommon, however, and edema may appear and disappear irrespective of the height of the cholesterol. The appearance or disappearance of the edema, which is usually relatively rapid when it begins, precedes the changes in the cholesterol. The cholesterol possibly may be mobilized from and at the expense of the deposits of fat in the body, because the patients are usually greatly emaciated, which becomes apparent as the edema disappears, even though the blood cholesterol remains relatively high and the intake of food is ample. The cholesterol in the nephrotic syndrome has difficulty in passing from the blood to the tissues, as the ascitic fluid has a very low cholesterol content. The blood cholesterol in the nephrotic syndrome can readily pass through the kidneys into the urine, although the hypercholesterolemia antedates by a considerable period the lipoiduria. The diet has no influence of hypercholesterolemia. The output of cholesterol in the bile is diminished in the nephrotic syndrome, so that apparently a real retention in the blood exists. A symptomless but definite hypoglycemia exists in nephrotic children. It seems probable, then, that hypercholesterolemia is the result of a disturbance of fat metabolism accompanying the nephrotic syndrome and not the cause or the result of edema.

Effect of Elementary Phosphorus in Rickets.—Hess states that there can be no doubt that elementary phosphorus brings about calcification of bone. The well known fact that lumpy jaw formerly developed as the result of chronic phosphorus poisoning was satisfactory evidence of this action. The phosphorus band that develops at the metaphyses of the long bones, whether they are normal or the seat of rickets, is likewise convincing evidence of the calcifying action of elementary phosphorus. This effect, however, does not mean that elementary phosphorus, alone or in combination, is of value in the prevention and cure of rickets. It should be borne in mind that rickets is a disorder characterized essentially by failure of the proliferating cartilage to calcify. It is in this respect that elementary phosphorus is entirely lacking in therapeutic effect. The phosphorus band can appear in the shaft without the slightest calcifying effect on the epiphyseal cartilage. This is evident by roentgenographic examination and equally apparent by microscopic examination. What elementary phosphorus does accomplish is to bring about calcification when osteoporosis complicates rickets, inducing a deposition of calcium salts in the juxtaepiphyseal region of the bones. It is therefore of value in the treatment of the premature baby with rickets and in the porotic form of rickets, which resembles senile atrophy of the bones. A complicating porosis of this kind may be noted especially when rickets has been associated with a febrile disorder or with marked marasmus, or when the extremities have not been used for a long period. Probably, elementary phosphorus is a serviceable adjuvant to cod liver oil in the cure of patients with osteomalacia. It has, however, no field in prophylaxis against rickets or in the cure of the patient with the ordinary case of rickets, because it does not exert an action on the calcification of the proliferating cartilage.

American J. Obstetrics & Gynecology, St. Louis

21: 623-764 (May) 1931

*Human Uterine Mucous Membrane During Menstruation. G. W. Bartelmez, Chicago.—p. 623.

Some Functional Criteria of Normal Pregnancy. A. W. Rowe, Boston.—p. 644.

*Effects of Experimental Torsion of Uterus on Vessels of Parametrium and Contiguous Tissues. J. O. Polak and V. P. Mazzola, Brooklyn.—p. 658.

*Torsion of Undiseased Uterine Adnexa in Virgins. I. G. Downer and O. A. Brines, Detroit.—p. 665.

*Eight Years' Experience with Roentgen Diagnosis in Gynecology: Pneumoperitoneum and Lipiodol in Pelvic Diagnosis. I. F. Stein, Chicago.—p. 671.

*Traumatic Separation of Symphysis Pubis. W. L. Ekas, Rochester, N. Y.—p. 680.

Primary Carcinoma of Fallopian Tube. J. Rabinovitch and J. D. Horton, St. Louis.—p. 689.

*Intracranial Hemorrhage of the New-Born. R. M. Tyson and W. H. Crawford, Philadelphia.—p. 694.

Mortality in Hysterectomy Operations. L. E. Burch and J. C. Burch, Nashville, Tenn.—p. 704.

Obstetric Mortality: Analysis of 2,268 Maternity Cases at Bronx Hospital. C. W. Frank and J. I. Kushner, New York.—p. 708.

*Oral Administration of Sodium Iso-Amylethyl Barbiturate (Sodium Amytal) in Labor. E. C. Hamblen and D. O. Hamblin, University, Pa.—p. 715.

Bercovitz Test in Pregnancy. A. J. Gordon and S. W. Emmer, Newark, N. J.—p. 723.
Tetanoid Syndrome and Its Relation to Menstrual Cramps. E. C. Hartley, St. Paul.—p. 725.
Primary Carcinoma of Vagina in Girl of Fourteen. L. G. Baldwin, Pasadena, Calif.—p. 728.
Combined Pregnancy: Case. S. A. Weintraub, St. Louis.—p. 735.
Spontaneous Evacuation of Pyosalpinx Through Uterus. C. H. Garvin, Cleveland.—p. 741.
Report of Fatal Case of Chemical Hysterectomy. J. M. Nokes, Nashville, Tenn.—p. 744.
New Cannula for Transuterine Tubal Insufflation. M. N. Hyams, New York.—p. 746.
Simple Method of Vaginal Illumination. N. Shnayerson, New York.—p. 748.
Simplified Method of Introducing Carbon Dioxide in Tubal Patency Test. S. Hanson, Stockton, Calif.—p. 749.
New Stitching Device. B. Thompson, Tucson, Ariz.—p. 750.

Uterine Mucous Membrane During Menstruation.—Bartelmez states that the premenstrual invasion of the uterine mucous membrane by leukocytes is followed by a reduction of nearly 50 per cent in its thickness. This precedes extravasation and desquamation. It involves a discharge of the dilated glands and of edema fluid and is ascribed to the relaxation of the myometrium. The dilatation of the previously virtual uterine lumen with fluid contributes progressively to the stretching of its lining. Another factor in involution is the reduction in the size of the gland cells. After extravasation the loss of tissue involves part of the spongy zone. The remainder of the mucous membrane comes to resemble superficially the basal zone of progravid stages. It is essential, therefore, to follow the boundary between spongy and basal zones throughout the menstrual period. The form of the spiral arteries is of no value for this, and gland form is not wholly adequate. The reticular framework of the basal zone remains denser than that of the spongy zone, and, since it is possible to recognize both zones beneath newly forming surface epithelium, it is concluded that the entire spongy zone is not always lost. All loose tissue on the surface of the menstruating uterus is not necessarily lost. In specimens from the first day, the gland cells show great variability in the degree of involution. The explanation offered is that in some cases the stimulus to secretory activity from the ovary continues longer than in others with reference to the onset of the vascular changes that result in extravasation. That is, corpus luteum activity may cease before or persist after bleeding has begun. In these cases, then, as in cases of menstruation without preceding ovulation, one has evidence that the control of the vascular apparatus is independent of the cyclic ovarian changes. The cessation of menstruation after complete ovariotomy is explained as due to the insusceptibility of a mucous membrane that has become anemic or atrophic. Variability in different regions of the same mucous membrane is a constant feature during menstruation as well as at other stages of the cycle. In the later stages of the flow, it is as real although not so striking as it usually is on the first day. The variability involves the time and extent of extravasation and the extent of tissue loss. This indicates a certain independence of the various terminal branches of the arterial tree.

Experimental Torsion of Uterus.—Polak and Mazzola describe experiments on dogs which show clearly that displacement of the uterus causes an increase in the size of the organ and in the number and size of the blood vessels. The apparent interference of return circulation is the chief factor. Clinically, fibroids, ovarian cysts, pregnancy, uterine displacements and lacerations all predispose to pelvic varicosities. Hence interference in the venous flow in the pelvis will cause varicosities in the absence of infection.

Torsion of Undiseased Uterine Adnexa in Virgins.—Downer and Brines report an instance of torsion of the adnexa in a girl, aged 7 years. The case is especially rare because the left adnexa were involved, whereas in nearly all of the cases previously reported the phenomenon occurred on the right side. There was apparently no previous disease of the tubo-ovarian tissue. A careful review of the literature revealed only eighteen authentic cases of torsion of the tube or ovary or both in supposed virgins and with reasonable assurance that there was no previous or coexisting pathologic condition in the pelvis. It is never possible, however, to state with complete assurance that the adnexa were normal before twisting because the extensive hemorrhage, necrosis and infarction that follow twisting would obliterate evidence of mild inflammation that might be present. The nineteen cases (including the authors' case) that have been reported fall in the following age distribution: one at 4 months, one at 4 years, and two at 6, one at 9, two at 10, one at 11, two at 13, two at 14, one at 15, and four at 16. The maximum age limit of virginity was set at 16 years, in order to exclude all possibility of venereal infection. Twisting invariably occurs from right to left on the right side and from left to right on the left side. Because of the rarity of the condition, a correct preoperative diagnosis is almost impossible. On account of the more frequent right-sided involvement, the incorrect diagnosis of appendicitis is usually made.

Roentgen Diagnosis in Gynecology.—Stein asserts that as proof of a successful Rubin test the subdiaphragmatic meniscus may be demonstrated fluoroscopically and roentgenographically. By the use of iodized poppy-seed oil or other radiopaque liquid, the Rubin test may be complemented or supplemented and the result recorded on a roentgen film. This is of value in recording "spill" in cases of tubal patency, in the formation of "pearls" in the presence of fluid, and in defining points of tubal obstruction. Uterine cavity abnormalities may also be recorded. The intra-uterine instillation of these substances is contraindicated in pregnancy because of the danger of inducing abortion. By the use of pneumoperitoneum and suitable roentgen technic the female pelvic viscera may be clearly visualized on the roentgenogram. Any condition altering the size, shape, density or relationship of these organs, as well as tumors, pregnancy and adhesions, can be diagnosed. By the use of the two methods together the maximum information concerning the pelvic organs is obtained. The procedure is a safe and simple one if ordinary care and sufficient time are employed. In the author's series no accidents or complications have occurred in over 530 cases of pneumoperitoneum and 200 cases in which iodized poppy-seed oil and pneumoperitoneum were combined. In settling differences of opinion and as a matter of permanent record of the pelvic status, roentgenograms with these methods are of great value.

Traumatic Separation of Symphysis Pubis.—According to Ekas, separation of the symphysis pubis without further injury to the pelvis is extremely rare. If there is more than a small amount of separation there is further injury to the pelvis, usually in the sacro-iliac articulations. Rupture of the symphysis pubis, per se, is not serious, ordinarily, and healing is usually satisfactory. As a rule, rupture of the symphysis pubis does not necessarily produce a deleterious effect on labor, and operative measures are not usually indicated. Subsequent pregnancies may cause a recurrent partial separation but, again, not necessarily affecting labor, and the end-result will usually be satisfactory.

Intracranial Hemorrhage of the New-Born.—Tyson and Crawford believe that a long second stage of labor, precipitous delivery and difficult obstetric procedures are the chief causes of intracranial hemorrhage. The prenatal health of the mother and the hemorrhagic disease of the new-born do not seem to be important causative factors. The history of delivery, the clinical symptoms and lumbar or cisternal puncture are the essential points of diagnosis. Repeated drainage of spinal fluid with relief of increased pressure is a most valuable means of treatment. Equally essential is good nursing and feeding care. Preventive measures consist in skilful obstetric procedures, the use of carbon dioxide and oxygen for resuscitation, or the Drinker respirator and the transfusion of whole blood intramuscularly in all cases of possible hemorrhage.

Sodium Amytal in Labor.—Hamblen and Hamblin state that the oral administration of sodium amytal in labor is probably just as satisfactory as the intravenous administration. The difference of only a few minutes in the rapidity of action when the drug is given orally, as compared with intravenous administration, is not sufficient to influence its effect in labor, except in the most stormy labors. The depth of narcosis depends rather on the dose employed than on the method of administration. Labor has apparently not been prolonged nor have operative deliveries increased. Postpartum hemorrhages have not occurred. An untoward effect on the baby has not been noted. Marked variations in susceptibility occur and there may be definite idiosyncrasies. For this reason the patient should be carefully watched during the period of narcosis, and blood pressure readings should be taken regularly. Complete amnesia

and a moderate amount of analgesia can be obtained in the vast majority of cases. The anesthesia cannot be relied on. The initial dose probably must be as large as 1 Gm., and a total of 2 Gm. during labor may be administered with comparative safety. Restlessness is probably the greatest drawback to the use of sodium amytal in labor and apparently occurs in the majority of cases. In the authors' experience this is not more marked when the route of administration is oral than when it is intravenous.

Annals of Internal Medicine, Ann Arbor, Mich.

4: 1373-1498 (May) 1931

*Trauma to Viscera from Nonpenetrating External Injuries, with Especial Reference to Heart. E. L. Tuohy and P. G. Boman, Duluth, Minn. —p. 1373.
*Chronic Meningococcemia Without Localizing Signs: Case. S. S. Riven, Nashville, Tenn., and A. A. Applebaum, Ann Arbor, Mich.—p. 1387.
*Nontuberculous Spontaneous Pneumothorax: Cases. R. L. Fisher, Detroit.—p. 1395.
*Cardiac Overaction: Most Constant and Most Dependable Sign in Thyroid Toxicity. H. J. Vanden Berg, Grand Rapids, Mich.—p. 1406.
Pituitary and Suprarenal Cortex Glands as Related to Pigment Formation. R. C. Moehlig, Detroit.—p. 1411.
Thoracic Aneurysm: Statistical Study of Seventy-One Cases. S. P. Sanford, Atlanta, Ga.—p. 1417.
Chronic Pulmonary Infections in Childhood. A. K. Drause, Tucson, Ariz.—p. 1424.
*Effect of Sodium Malate Combinations on Gastric Acidity. J. C. Krantz, Jr., and A. A. Silver, Baltimore.—p. 1441.
Tuberculin Therapy. M. J. Breuer, Lincoln, Neb.—p. 1447.
Present Status of Heliotherapy in Tuberculosis. C. K. Petter, Oak Terrace, Minn.—p. 1452.
Mild Hyperthyroidism and Neuroses. P. S. Smith, Abingdon, Va.—p. 1460.
Scurvy in Presence of Thyrotoxicosis. R. H. Kampmeier, Pueblo, Colo. —p. 1469.

Trauma to Viscera from External Injuries.—Tuohy and Boman call attention to the fact that youthful resilient thoraces permit extreme compression without fracture. The thoracic viscera, like the abdominal, may be torn and lacerated, and early and late heart chamber rupture may result, all without even external bruising. Therefore, nonfatal degrees of laceration and hemorrhage may occur. These, with edema or simple trauma, may induce definite physiologic perversions. Auricular fibrillation and degrees of heart block are discussed.

Chronic Meningococcemia.—Riven and Applebaum report a case of chronic meningococcemia without localization, followed by recovery. They state that a definite diagnosis of meningococcemia can be made only by positive blood cultures for the organism. The prognosis is excellent when localization does not occur. In their case there were complete subsidence of symptoms and consistently negative blood cultures following the intravenous use of specific antimeningococcus serum. The authors believe that meningococcemia offers an explanation for a limited number of cases of prolonged fever of obscure etiology.

Nontuberculous Spontaneous Pneumothorax.—Fisher reports a case of spontaneous pneumothorax in which asthma was the causative agent. In a second case the cause was not apparent. In a third case, physical exertion seems to have had an etiologic bearing on its occurrence. The author believes that idiopathic spontaneous pneumothorax is of much more frequent occurrence than is generally recognized. These cases give further support to the contention that spontaneous pneumothorax is not necessarily secondary to infection with tuberculosis.

Cardiac Overaction.—Vanden Berg emphasizes the importance of the presence of cardiac overaction at a time when the symptoms and signs generally understood to express thyroid dysfunction are not yet obvious—in other words, in early or mildly toxic cases and in atypical cases. The sign is valuable also after operation as being an indication of remaining toxicity. Because of its presence and constancy in practically all cases of goiter toxicity, the author considers it the most helpful sign suggesting the presence of thyroid dysfunction.

Effect of Sodium Malate Combinations on Gastric Acidity.—A person whose stomach acidity was abnormally high and who had the usual symptoms was brought to the attention of Krantz and Silver. It was suggested as an experimental measure that the patient eliminate the use of sodium chloride as a condiment from the diet and replace it with a sodium malate mixture (85.5 per cent of disodium malate, 9 per cent of trisodium citrate, 5 per cent of triammonium citrate and 0.5 per cent of manganese bromide). After three months' use of this material, the patient reported greatly relieved symptoms and a more liberal protein diet. He reacted favorably to the use of the condiment. On account of this, the authors began a systematic investigation of the action of the sodium malate mixture on gastric acidity. They found that the mixture possesses the capacity to reduce the hydrogen ion concentration of gastric acidity. Its use as a condiment in cases of hyperacidity to replace table salt would seem to possess a twofold advantage: the decreasing of the free gastric acidity and the elimination of a potential source of hydrochloric acid.

Archives of Otolaryngology, Chicago

13: 647-784 (May) 1931

*Prognostic Value of Examination of Blood in Otology. A. Weiss, New York.—p. 647.
*Tumors of Larynx and Thyroid: Roentgenographic Study. G. T. Pack and L. F. Craver, New York.—p. 658.
Functions of Eustachian Tube: Its Relation to Chronic Diseases of Middle Ear. L. K. Pitman, New York.—p. 676.
*Conjugate Deviation of Head and Eyes: Its Value in Diagnosis and Localization of Abscess of Brain. I. L. Meyers, Los Angeles.—p. 683.
Cholesteatoma: Some New Principles in Its Treatment, Including Test for Its Chemical Demonstration. A. Rejtö, Budapest, Hungary.—p. 709.
Primary Tracheobronchial Diphtheria. V. K. Hart and C. N. Peeler, Charlotte, N. C.—p. 714.
*Paralysis of Abducens Nerve Accompanying Case of Mastoiditis: Unusual Form of Gradenigo's Syndrome. E. M. Freund, Albany, N. Y.—p. 717.
Implantation of Ivory in Ozena: Approved Technic; Further Observations. J. I. Kemler, Baltimore.—p. 726.
Method of Nasal Packing Following Submucous Resection of Septum Which Allows Free Nasal Respiration. E. Roth, Flushing, N. Y. —p. 732.
Combined Tongue Depressor and Pillar Retractors. T. R. Thorburn, New York.—p. 733.
Cavernous Sinus Thrombosis in Child Following Tonsillectomy. M. C. Comer, Tucson, Ariz.—p. 733.
Tumors of Nose and Throat. G. B. New and W. Kirch, Rochester, Minn.—p. 735.

Blood Examination in Otology.—From thousands of examinations of the blood in a series of 240 patients in an otologic service, including 108 with acute mastoiditis, 9 with chronic mastoiditis, 9 with perisinuous abscesses, 12 with sinus thrombosis, 5 with abscess of the brain, 7 with meningitis and 88 with otitis media purulenta acuta, Weiss concludes that any rise in the percentage of staff cells (immature neutrophils) indicates the presence of some postoperative complication. These complications need not be in the postoperative area but may involve some other portion of the body. The leukocyte and staff counts are often much higher in acute otitis media purulenta than in acute mastoiditis. The height of the staff count in acute infections of the middle ear is not a guide to the necessity for operation. Patients with high staff cell counts often improve and do not require operation, while others with low counts require mastoidectomy. The blood pictures in the acute, chronic or recurrent cases of mastoiditis do not show any difference and rarely show an increase in cells unless some complication is present. Cases of abscess of the brain or of meningitis do not cause a marked increase in the reaction of the bone marrow unless accompanied by systemic involvement. All cases of mastoiditis with venous complications show marked changes in the blood picture. Although the blood count cannot be utilized as an aid in diagnosis, when used in a series, it is of inestimable importance in prognosis.

Tumors of Larynx and Thyroid.—According to Pack and Craver, lateral roentgenograms of the neck are a useful supplementary means of studying tumors of the larynx and thyroid. Tuberculosis of the larynx gives a hazy, indistinct outline, owing to the invasion of soft parts and the rarefaction of the ossified cartilages. Syphilis of the larynx presents a picture of sharp, distinct ossified areas, owing to increased proliferation of bone. Lateral roentgenograms reveal the anteroposterior compression, tracheal stenosis and tracheomalacia produced by certain types of goiter and by tumors of the thyroid. Carcinoma of the thyroid may perforate the trachea to form an intratracheal tumor, easily visualized on the roentgenogram. Lateral roentgenograms of the neck exhibit the outlines of retropharyngeal tumors. Some of these growths are inflammatory, whereas others are neoplastic; e. g., neurogenic. Car-

cinomas of the base of the tongue, valleculae, epiglottis and aryepiglottic folds distort the lateral silhouettes of these structures to produce a characteristic roentgenogram. Intrinsic laryngeal cancers obliterate the light oval areas on the roentgenogram that represent the ventricles of Morgagni. The peculiar punched-out appearance of the thyroid cartilage as seen in the roentgenogram is almost specific for laryngeal cancer.

Conjugate Deviation of Head and Eyes.—Meyers states that, in abscess of the cerebrum, conjugate deviation of the head and eyes is extreme when the lesion affects the angular gyrus of the parietal lobe; it is of moderate extent if the lesion affects the posterior part of the frontal lobe close to the rolandic region. It is absent, no matter how extensive the lesion, in abscess of the prefrontal region of the frontal lobe, in abscess of the occipital lobe and in abscess of the temporal lobe. The deviation in cerebral lesions, when present, is toward the side of the lesion. Meyers interprets the movement as an attitude of attention and assumes that the angular gyrus is the center of psychic vision (i. e., the interpretation of visual stimuli), as shown by the fact that lesions of this region on the left side give rise to alexia or agnosia, the inability to understand writing or to recognize objects by vision; he then concludes that attention is dominated most powerfully by stimuli arising within the sphere of vision and relatively little by other kinds of stimuli. Conjugate deviation of the eyes, regardless of the position of the head, is an invariable accompaniment of an abscess of the cerebellum. The deviation, varying in extent, in this type of case is in a direction opposite the lesion. It manifests itself most clearly as a persistent deviation of the eyes to the side opposite the lesion on cold caloric stimulation of the labyrinth on that side, the deviation interfering with or greatly delaying the development of the rapid phase of the nystagmus. The phenomenon is undoubtedly due to involvement of the cerebellum itself and not to an involvement of structures at a distance. The deviation of the head that is frequently observed in abscess of the cerebellum corresponds in direction to that of the quick component of the nystagmus. It is suggested that the deviation of the head is a compensatory phenomenon intended to replace in part the movement of the eyes that is to occur during the slow component of the nystagmus, a movement that becomes restricted in range, owing to the deviation of the eyes brought about by the lesion of the cerebellum.

Paralysis of Abducens Nerve.—Freund emphasizes the fact that Gradenigo's syndrome seems to occur in children oftener than in adults. The sequence of symptoms of this triad is not always the same. The condition is potentially serious in each instance, and the prognosis should be guarded. The syndrome is usually ushered in from three to four weeks after the onset of acute otitis media. It may occur after mastoidectomy, although it usually precedes the latter. In the differential diagnosis, among the conditions to be considered are septic sinus thrombosis, thrombosis of the jugular bulb, epidural abscess, syphilitic (latent) meningitis and diffuse purulent or serous labyrinthitis. The treatment is essentially surgical, a Schwartze operation usually sufficing. Lumbar puncture, unless definitely indicated, should be delayed for fear of disseminating an infection or of irritating the meninges. Transfusion of blood should be employed early in septic cases rather than as a later emergency measure.

Johns Hopkins Hospital Bulletin, Baltimore

48: 261-351 (May) 1931

Fetal Blood Studies: II. Lactic Acid Content of Umbilical Cord Blood Under Various Conditions. N. J. Eastman and C. M. McLane, Baltimore.—p. 261.

Structure of Renal Tubule of Toadfish. A. L. Grafflin, Baltimore.—p. 269.

*Study of Morbid Anatomy of Hearts from Patients Dying with Hyperthyroidism. D. McEachern and G. Rake, Baltimore.—p. 273.

*Certain Aspects of Syphilitic Cardiac Disease. E. P. Carter and B. M. Baker, Jr.—p. 315.

*Angina Agranulocytica and Its Treatment. L. P. Hamburger, Baltimore.—p. 339.

*Roentgen Therapy of Angina Agranulocytica. C. A. Waters, Baltimore, and W. B. Firor, Detroit.—p. 349.

Pathology of Heart in Hyperthyroidism.—McEachern and Rake review the literature on the pathology of the heart in hyperthyroidism and point out and discuss the contradictions of evidence. They also report twenty-seven cases in patients dying with hyperthyroidism. The cardiac observations are compared with those in 150 suitably chosen control cases. In fourteen instances the hearts were normal. In eight instances, moderate perivascular or intermuscular fibrosis or small round cell infiltration was found; similar changes were also encountered among the control cases, though less frequently. Conspicuous alterations were found in five instances, in three of which there was coexistent heart disease. Cardiac hypertrophy was noted in sixteen of the twenty-seven cases. No relationship could be established between the incidence of auricular fibrillation or the duration of hyperthyroidism and the ultimate changes in the heart. Congestive heart failure occurred in five of the six patients that presented coexisting organic heart disease. From this evidence it is impossible to ascribe the cardiac phenomena of the disease to structural changes in the muscle. It is pointed out that the hearts from animals with hyperthyroidism continue to beat, when isolated, at a much faster rate than similar preparations from normal animals.

Syphilitic Cardiac Disease.—In the treatment of syphilitic cardiac disease, Carter and Baker delay all antisyphilitic treatment until the signs of circulatory failure and the subjective symptoms of pain or paroxysmal dyspnea with or without cardiac failure have been relieved by proper hospital care. Treatment is then begun with potassium iodide and bismuth or mercury. This is continued for at least ten to twelve weeks. If at this time the patient has acquired an adequate cardiac reserve, the use of an arsenical preparation is cautiously begun. Either neosarphenamine or bismuth arsphenamine sulphonate given intramuscularly (from 0.1 to 1.2 Gm. dissolved in water) is used. Bismuth salicylate, 2 cc. of a 10 per cent solution in olive oil, the equivalent of 0.2 Gm., given intramuscularly, is also in general use. The bismuth arsphenamine sulphonate may be acceptably used in those cases of cardiovascular syphilis in which the intravenous use of the arsenical is contraindicated. The initial dose of neoarsphenamine is usually from 0.1 to 0.2 Gm. at weekly intervals. This is continued for ten to twelve weeks, alternating with courses of bismuth and the iodides. This method of procedure is then continued for two years or more. The importance of avoiding any treatment reaction whatever is insisted on.

Angina Agranulocytica and Its Treatment.—Hamburger believes that agranulocytic angina should be treated as a life-threatening emergency by immediate and repeated blood transfusions, the cautious irradiation of the skeleton by an expert roentgen therapeutist and the vigorous treatment of local lesions. The phlegmonous cervical mass, when present, has sometimes been incised to relieve respiratory obstruction, but as a rule it seems wise to abstain from surgical intervention, since a localized abscess does not form under the existing agranulocytic state.

Roentgen Therapy of Angina Agranulocytica.—According to Waters and Firor, the results of roentgen irradiation of the bone marrow in angina agranulocytica, though not definitely ascertainable as yet, justify a trial of such therapy whenever possible.

Journal of Allergy, St. Louis

2: 205-300 (May) 1931

*Hereditary Factor in Hypersensitiveness: Anaphylaxis and Allergy. G. W. Bray, London, England.—p. 205.

*Elimination Diets for Diagnosis and Treatment of Food Allergy. Irene Waters, New York.—p. 225.

*Elimination Diets as Aid in Diagnosis and Treatment of Eczema. J. G. Hopkins, Irene Waters and Beatrice Kesten, New York.—p. 239.

Rational Grouping of Food Allergens. R. V. Ellis, Minneapolis.—p. 246.

*Comparison of Ragweed Pollen Incidence in United States for 1929 and 1930. O. C. Durham, North Chicago, Ill.—p. 258.

Botanic Survey of Needles, California, with Especial Reference to Hay-Fever Producing Flora. Alva Watry and R. W. Lamson, Los Angeles. —p. 272.

Enteral Absorption of Antigen and Apparent Failure of Antigen Secretion in Human Milk. F. S. Smyth, San Francisco, and Katherine Bain, St. Louis.—p. 282.

Report of 100 Cases of Local Passive Transfer of Hypersensitiveness. L. E. Markin, Chicago.—p. 285.

Hereditary Factor in Hypersensitiveness.—Bray studied the family history in 200 consecutive cases of asthma in children up to 12 years of age. In all, 4,152 relatives were considered, an average of more than twenty per patient. The manifestations particularly inquired for were asthma, hay-fever, eczema,

urticaria and migraine. Due care was taken to exclude such "positive" cases as asthma commencing late in life or in the presence of known renal or cardiac disease; sneezing of an occasional nonseasonal and nonenvironmental nature; eczema of but short duration or of a presumably occupational etiology; urticaria occurring only occasionally in childhood and at extremely isolated instances in later life; or migraine that did not give more than one of the characteristic ocular, cerebral or abdominal symptoms. From his observations the author concludes that one is not justified in endeavoring to explain the transmission of the allergic diathesis solely according to mendelian laws as two modes appear to be involved: (1) germinal, or true mendelian, through the germ plasma of the parents; (2) placental or serum sensitization, not truly hereditary, being an active or passive fetal sensitization in utero. That the greater or more complete the inheritance, the earlier the age at which symptoms will have their onset, was confirmed even during the first decade; for, when the inheritance was bilateral, the onset in practically all the cases was before the sixth year, and when unilateral before the eighth year. The diathesis is transmitted twice as often through the mother as through the father, and twice as many offspring are likely to be affected when the female transmits. Of the offspring more than twice as many males as females are likely to be affected before puberty; the probability of recovery at puberty is much greater in the boy than in the girl, and the chance of developing allergic manifestations after that age is more probable in the female than in the male. A positive family history was determined in 68.5 per cent of cases, in 51.5 per cent unilateral, in 17 per cent bilateral. The nature of the allergic diathesis would appear to be that of a particular biochemical make-up, a tendency to store up much alkali reserve without becoming definitely alkalotic.

Elimination Diets and Food Allergy.—Waters presents in tabular form seven elimination diets for the diagnosis and treatment of food allergy in people eating at home and four for those eating in restaurants. The method of employment of these diets is as follows: The patient is placed on one diet for at least a week and frequently for two weeks. If this has no effect on his symptoms, successive diets are tried until one is reasonably certain that the foods each contains either have or have not a definite influence on his symptoms. If a patient becomes worse on one diet, another is substituted. If he becomes definitely better, this diet is adhered to until the patient has improved sufficiently for an exacerbation of symptoms to be observed. Then, using this diet as a basis, one new food is added at intervals of four days, fruits and vegetables being added first, and then meat and cereals. The other common allergens are among the last foods to be added. If one of the new foods causes a return of the symptoms, it is excluded and no more additions are made until the patient is definitely improved, so that a recurrence of symptoms resulting from any other foods can be noted. Instead of using one diet as a basis, one may try successive diets and observe the effect of each one on the symptoms. In the latter instance, after each of the four diets has been tried, the ones on which the patient showed definite improvement are combined and prescribed for a week or two. At the end of this time, if improvement continues, one new food is added at intervals of four days until one finds the food or foods that cause a recurrence of symptoms.

Elimination Diets and Eczema.—Hopkins and his associates have found elimination diets of value in the diagnosis of chronic eczema. As compared with skin tests they present the advantage of: (1) giving direct evidence of the relationship of sensitivity to the patient's symptoms; (2) enabling one to detect sensitivity during the periods when the skin reaction is suppressed, and (3) being available to the practitioner when proper reagents for skin testing cannot be obtained. The chief disadvantages are: (1) the difficulty in interpreting results, owing to the slow response of eczemas to the elimination of foods and to the interference of other sensitizing factors; (2) the tediousness of the procedure, and (3) the difficulty of rigidity excluding the most common food allergens from the diet. The combined use of elimination diets and skin tests is usually necessary for accurate diagnosis. Of 112 patients studied, eczema was caused solely by food sensitization in 17 per cent. This sensitivity was determined solely by means of elimination diets in 6 per cent.

Incidence of Ragweed Pollen.—Durham states that the severe drought of 1930 reduced the United States ragweed pollen crop 43 per cent below the figures for 1929. The greatest effect of the drought was on giant ragweed. July seems to be the critical month for the development of ragweed. Apparently the weather factors that produce a poor corn crop likewise produce a poor ragweed crop.

Journal of General Physiology, Baltimore

14: 547-683 (May 20) 1931

Detachment of Bacteriophage from Its Carrier Particles. D. M. Hetler and J. Bronfenbrenner, St. Louis.—p. 547.

Electrokinetic Phenomena: Comparison of Electrophoretic and Streaming Potentials. H. A. Abramson and E. B. Grossman, Cambridge, Mass.—p. 563.

Distribution of Hydrochloric Acid in Gelatin Gels. L. Halpern, London.—p. 575.

Occurrence of Porphyrins in Cultures of C. Diphtheriae. C. B. Coulter and F. M. Stone, New York.—p. 583.

Protein Coagulation and Its Reversal: Identity of Normal Hemoglobin with Hemoglobin Prepared by Reversal of Coagulation, as Determined by Solubility Tests. M. L. Anson and A. E. Mirsky, New York.—p. 597.

Id.: Globin. M. L. Anson and A. E. Mirsky, New York.—p. 605.

Production and Inhibition of Action Currents by Alcohol. W. J. V. Osterhout and S. E. Hill, New York.—p. 611.

Temperature Characteristic for Production of CO_2 by Phaseolus Seedlings. W. J. Crozier and A. E. Navez, Cambridge, Mass.—p. 617.

Temperature Characteristics for Oxygen Consumption of Germinating Seeds of Lupinus Albus and Zea Mays. P. Tang, Cambridge, Mass.—p. 631.

Flocculation of Gelatin at Iso-Electric Point. Danella Straup, San Francisco.—p. 643.

Vapor Pressures of Aqueous Solutions with Especial Reference to Problem of State of Water in Biologic Fluids. A. Grollman, London.—p. 661.

Journal of Immunology, Baltimore

20: 333-393 (May) 1931

Comparative Study of Anaphylactic and Tuberculin Types of Hypersensitiveness. L. Dienes, Asheville, N. C.—p. 333.

*Loss of Immune Substances from Body: Diphtheria Antitoxin in Human Urines. J. M. Neill, E. L. Gaspari and R. A. Mosley, Nashville, Tenn.—p. 347.

*Heredity of Agglutinogens M and N of Landsteiner and Levine. A. S. Wiener and M. Vaisberg, Brooklyn.—p. 371.

On Spontaneous Immunization of Rabbits to Vaccine Virus. F. Duran-Reynals, New York.—p. 389.

Studies in Contact Dermatitis: 1. Nature and Etiology of Pollen Dermatitis. A. Brown, E. L. Milford and A. F. Coca, New York.—p. 393.

Loss of Immune Substances from Body.—Neill and his associates present data on the daily output of diphtheria antitoxin which show that elimination by way of the urine can account for only a small portion of the drop frequently observed in the antitoxin content of the blood. However, none of the pathologic urines examined contained more than moderate amounts of albumin, and it is suggested that, in cases of acute nephrosis or other clinical conditions in which large amounts of serum protein are eliminated, urinary elimination of antitoxin may be sufficient to cause a significant loss in the immunity reserves of the body.

Heredity of Agglutinogens M and N.—Wiener and Vaisberg examined specimens of blood of 131 families with 642 children for the agglutinogens A, B, M and N. The agglutinogens M and N seem to be inherited entirely independently of the agglutinogens A and B. Concerning the heredity of the agglutinogens M and N, two exceptions to the theory of a single pair of allelomorphic genes were found, but in neither case could the possibility of illegitimacy be excluded. Concerning the heredity of the agglutinogens A and B, one exception to the Bernstein theory was found, but here again the possibility of illegitimacy could not be excluded.

Pennsylvania Medical Journal, Harrisburg

34: 605-692 (June) 1931

Care of Compound Fractures. F. Beekman, New York.—p. 605.

Cooperation Between Oculist and Otorhinolaryngologist. G. W. Schlindwein, Erie.—p. 610.

Peroral Endoscopy in General Hospital. L. T. Buckman, Wilkes-Barre.—p. 616.

Surgery in Diabetes: Medical Considerations. J. T. Beardwood, Jr., Philadelphia.—p. 621.

Id.: Surgical Considerations. F. A. Bothe, Philadelphia.—p. 624.

Analysis of Syndrome of Precocious Menstruation: Early Puberty (Feminine Type). Premature Ripening of the Skeleton. T. O. Elterich, Pittsburgh.—p. 629.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

54: 1-116 (April) 1931

Quantitative Management of Contraction in Lowest Level Coordination. C. S. Sherrington.—p. 1.
*Physiologic Integration of Sensory Processes Within Gray Matter of Nervous System. R. S. Creed.—p. 29.
*Otitic Hydrocephalus. C. P. Symonds.—p. 55.
*Glycosurias of Cerebral Origin. C. J. Munch-Petersen.—p. 72.
*Relationship Between Intensity of Tone Stimuli and Size of Resulting Conditioned Reflexes. P. S. Kupalov, R. S. Lyman and B. N. Lukov. —p. 85.
*Search for Trophic Influence of Posterior Spinal Roots on Skeletal Muscle, with Note on Nerve Fibers Found in Proximal Stumps of Roots After Excision of Root Ganglions. Sarah S. Tower.—p. 99.

Physiologic Integration of Sensory Processes.—Creed states that it is abundantly clear that the afferent pathway from a receptor organ to the higher levels of the brain is not to be visualized as a telegraph line—not even as a trunk line with relays at various stages. The central nervous system acts in this connection as much more than a complicated telephone exchange. Messages brought into it along peripheral nerve fibers are not transmitted to the sensorium in anything like their original form. They influence, and are influenced by, other messages arriving from end-organs of similar and of diverse function. Sometimes they are inhibited or canceled, sometimes they reinforce or facilitate one another's action. Always the message as ultimately delivered depends on the past and present events in the transmitting system as a whole. Before the impulses reach levels in the brain at which consciousness is affected, they initiate, and are acted on by, processes that modify to a greater or less extent the pathways by which they are ascending. Every relay, too, gives opportunity for alteration of rhythm and for after-discharge. This physiologic interaction between trains of centripetal impulses needs, in the present state of knowledge, to be carefully distinguished from psychic interplay between already elaborated percepts, and the distinction cannot always be drawn on the basis of the ability to analyze a sense presentation by introspection.

Otitic Hydrocephalus.—Symonds is convinced that as a not uncommon complication of otitis media there may occur a state of increased intracranial pressure due to the presence of an excess of normal cerebrospinal fluid. This condition, which has usually been described under the title of serous meningitis but which does not show clinical or serologic evidence of meningeal inflammation, is sufficiently constant in its manifestations to deserve a separate name. The term ependymitis serosa has already been proposed by Ayala but implies a knowledge of the etiology, which is still unknown. The author suggests "otitic hydrocephalus," a title that does not imply an active process of inflammation, and, being deprived of the qualification internal or external, will include fluid within both the ventricles and the subarachnoid space. The condition appears almost confined to children and adolescents. It may occur as a complication of an acute or chronic otitis media with or without mastoiditis, labyrinthitis, lateral sinus thrombosis, extradural abscess, or meningitis. Of the symptoms, in the fully developed state of otitic hydrocephalus, intermittent headache and papilledema are the most constant. Paralysis of the sixth nerve on the side of the discharging ear has been recorded in a number of cases. The headache is generalized or occipitofrontal, and of the bursting type which characterizes increased intracranial pressure. It may be of severe or slight degree, and in the latter case papilledema may advance to secondary optic atrophy without any other symptoms of importance. Nausea or vomiting may be associated with the headache but are inconstant. The temperature and pulse rate in the fully developed state are normal. Drowsiness may sometimes be present, but on the other hand the mental state may be remarkably clear, considering the degree of papilledema. The evolution of the symptoms may be insidious, or they may develop after a preliminary phase of fever and cervical rigidity, indicating a meningitis. In this case the symptoms of meningitis subside as those of hydrocephalus develop. The cerebrospinal fluid in the fully developed state is under increased pressure but clear and does not contain an excess of cells or protein. In the cases in which there is a preliminary phase of meningitis, the cerebrospinal fluid examined at this stage shows an excess of cells and of protein. The course of the illness may be protracted to weeks or months but leads toward complete recovery. This, however, may be complicated by impairment of vision from optic atrophy. Although in some cases recovery appears to have been spontaneous, the rational line of treatment is drainage of the excessive cerebrospinal fluid by lumbar puncture. This should be repeated if necessary, the indications being recurrent headache or persistent papilledema. If repeated lumbar puncture fails to relieve the symptoms, ventricular puncture should be undertaken, in the first place on the right side whatever the side of the aural lesion. If right-sided ventricular drainage should fail to be effective in relieving symptoms, the left ventricle also should be tapped. Surgical attention to the otitis media and its local complications plays a natural part in the treatment, but the presence of hydrocephalus is not an indication in itself for intracranial exploration.

Glycosurias of Cerebral Origin.—Munch-Petersen reports a case of glycosuria of cerebral origin which supplies a valuable supplement to the theory that sometimes in this condition there is a connection between the function of the kidney tubules and the neurohypophyseal apparatus. Even though his investigations of cerebrally conditioned glycosurias do not form a foundation for a definite etiologic or pathogenic division of these conditions, a threshold test which he describes and filtrating determinations have made it possible to group these diseases more definitely when working clinically with glycosurias. By comparing this grouping with other clinical features, as the course of the disease, and with pathologico-anatomic investigations, one may perhaps be able to determine more accurately their etiologic and pathogenic factors.

Tone Stimuli and Size of Resulting Conditioned Reflexes.—Tone stimuli of varying intensity but the same pitch from below the threshold of audibility to moderately loud sounds were produced by Kupalov and his associates with an oscillator and transmitter, and the resulting conditioned reflexes were measured. In one series of experiments lasting four months with one dog, tone stimuli were varied in intensities taken at random, and an interval of at least one day without tones was always given. A close correlation existed between the intensity of the tones and the size of the resulting conditioned reflexes. The relationship was exponential and a formula was found for a curve drawn to represent the experimental data. No such correlation existed in another series of experiments with the same dog and in an initial set of similar experiments with a second dog. In these experiments the tone stimuli were kept at the same intensity for several days, then abruptly changed to another widely different intensity for several days more, and then back to the original intensity.

Trophic Influence of Posterior Spinal Roots on Skeletal Muscle.—Tower removed the posterior root ganglion supply of the muscles of one forelimb in four cats, and in one of these the stellate ganglion also. After four, six or twelve months the animals were killed, gross specimens were weighed, and histologic preparations of interosseous muscles and spinal cord segments were made. During life, atrophic or dystrophic changes were not noted in the forelimbs affected by the lesions. Likewise, weighing fixed specimens did not bring out a significant difference between experimental and control material. Furthermore, the microscopic preparations did not yield morphologic evidence of atrophy or dystrophy. And on measurement the diameter of 400 muscle fibers from the side of operation and of 400 normal fibers averaged the same. Study of the spinal roots and cords showed numbers of fine nerve fibers in the posterior roots. Some of these fibers penetrated the spinal cord along the blood vessels, but none, probably, through the root zone proper. They were most numerous in the longest surviving specimen. Many of the fibers could be directly traced from the ventral roots. The conclusion was reached that the posterior roots do not play an essential part, either alone or in association with sympathetic innervation, in maintaining the normal trophic state of skeletal muscle.

British J. Dermatology & Syphilis, London

43: 277-328 (June) 1931

*Inquiry into Causes of Infantile Facial Eczema and Relation of Besnier's Prurigo to This Condition. G. W. Bamber.—p. 279.
Relation of Sugar Intolerance to Certain Diseases of Skin. G. G. Campbell.—p. 297.

Infantile Facial Eczema and Besnier's Prurigo.—Bamber states that the higher incidence of facial eczema in male infants (3:1) is considered to be against an external factor being the chief cause. The initial lesion is either an erythemato-urticarial reaction or a primary pruritus. Fat babies are more likely to be affected. The onset and exacerbations are often associated with gastro-intestinal disturbances and with asthma. A family history of some allergic manifestation is not uncommon. Some constitutional peculiarity of the infant is probably the most important factor determining the development of eczema. Of external factors, cold weather and variations in temperature are the most important. Infection of the skin is neither constant nor necessary. Besnier's prurigo (flexural pruritus, eczema flexuarum, neurodermatitis) is preceded, immediately or more remotely, by infantile facial eczema in more than half the cases examined. Transitions from one to the other are seen. The infantile and the family history of the children with Besnier's prurigo is similar to those of eczematous infants. The same constitutional peculiarity probably underlies the two.

British Journal of Ophthalmology, London

15: 305-368 (June) 1931

Tumors of Lacrimal Gland. T. Colley.—p. 305.
Rapidly Growing Malignant Tumor of Lacrimal Gland. G. H. Pearson.—p. 314.
Note on Gonin's Operation for Detached Retina. J. H. Fisher.—p. 317.
Epidemic of Conjunctivitis Due to Infection with Bacillus Faecalis-Alcaligenes. R. H. B. Barrow.—p. 319.
Glaucoma and Low Tension Disk Cup Enlargements. R. Pickard.—p. 323.
New Portable Corneal Microscope. C. J. L. Blair.—p. 333.

British Medical Journal, London

1: 879-920 (May 23) 1931

*Observations on Angina Pectoris. J. Cowan.—p. 879.
Development of Science of Nutrition in Relation to Disease. J. B. Orr.—p. 883.
Three Cases of Psittacosis with Two Deaths. H. R. Fisher and R. J. Helsby.—p. 887.
Id.: Summary of Necropsy. Dorothy S. Russell.—p. 888.
Id.: Note on Bacteriologic Findings. S. P. Bedson.—p. 890.
Case of Cerebellar Abscess. C. Yorke.—p. 891.
*Technic of Surgical Diathermy: Describing New Electrode. A. Eidnow.—p. 892.

Angina Pectoris.—Cowan states that the surgical treatment of angina pectoris is still in the experimental stage and doubts whether it will ever prove of much value. All surgical treatment aims at the relief of cardiac pain; but pain is a useful danger signal, an indication to the patient that his current activities are harmful and must be stopped at once or death will ensue. But there remain a few patients whose sufferings are so severe that relief at any cost seems desirable. Numerous operations on the cervical nerves and ganglions have been performed with the object of severing the sensory communications between the heart and the brain; but these operations are based on erroneous theories. The sensory tracts run into the upper dorsal segments of the spinal cord and not along the neck. It is known that left-sided pain is referred from the heart to the upper five or six segments, the chief pathway being along the inferior cardiac nerves, the stellate ganglion, the vertebral sympathetic ganglions and the white rami communicantes to the spinal cord. Subsidiary pathways may exist along the middle cardiac nerves and the lower cervical sympathetic trunk to the stellate ganglion; and directly from the heart to the upper dorsal vertebral ganglions. The pathways may be blocked by: (1) removal of the stellate and the upper dorsal vertebral ganglions; (2) section or block of the rami communicantes; (3) section or block of the posterior nerve roots. The least dangerous procedure seems to be alcohol injection of the rami communicantes. The operation is merely palliative and in no way curative; but relief from severe recurrent pain, even if of short duration, may be an inestimable boon to some patients.

Technic of Surgical Diathermy.—Eidnow describes a new type of active electrode that can be used for accurate incision and dissection of tissue with the same safety as the surgeon's scalpel. This electrode consists of a molybdenum wire, which projects 2 mm. beyond a quartz rod. The quartz rod is about 23 cm. (9 inches) long and is tapered and bent at its end; a capillary hole is bored throughout its length, and the molybdenum wire is threaded through the fine hole; this can be regulated and adjusted by a clamping screw. The molybdenum wire is connected to some copper flex, which is covered by rubber tubing throughout its whole length, and is attached to the outer wall of the terminal 1.5 cm. of the quartz rod. In this way the electrode is completely and safely insulated and can be readily sterilized by boiling. Since fused quartz can withstand high temperature and rapid cooling and is a good insulator, there is no danger that this electrode will be damaged or will crack. The electrode can be used repeatedly as it is rustless and is not softened or damaged by high temperature or oxidation. The length of the active end of this electrode is roughly 2 mm., and it is surrounded by the quartz capillary bored rod and therefore is well insulated. By this means it is possible to cut and dissect tissues carefully and to operate on vascular areas, avoiding the important large blood vessels and nerves. The depth of the incision can always be controlled with the same care as with the scalpel. Pressure on the electrode should be avoided, for the incision is made by the electrical discharge from the point of the active electrode.

1: 921-962 (May 30) 1931

Hemolytic Icterus. L. Dawson.—p. 921.
*Pseudo-Argyll Robertson Pupils with Absent Tendon Reflexes: Benign Disorder Simulating Tabes Dorsalis. W. J. Adie.—p. 928.
Acute Massive Collapse of Lung Following Lipiodol Injection. A. J. S. Pinchin and H. V. Morlock.—p. 930.
*Homologous Antipneumococcal Serums in Treatment of Lobar Pneumonia. R. R. Armstrong and R. S. Johnson.—p. 931.

Pseudo-Argyll Robertson Pupils with Absent Tendon Reflexes.—Adie calls attention to a benign symptomless disorder characterized by pupils that react on accommodation but not to light and by absent tendon reflexes. Five of six cases he describes came under his notice in the course of a few weeks. Though harmless in itself it merits recognition because it is often mistaken for a manifestation of syphilis of the nervous system, with unfortunate consequences for the patients and their families. It is not surprising that all of these patients with "Argyll Robertson pupils" and absent tendon reflexes were thought to be suffering from syphilis of the nervous system, congenital or acquired. The correct diagnosis can be made with certainty by closely observing the contraction of the pupil during the act of accommodation for near objects. The true Argyll Robertson pupil reacts promptly and fully, often excessively, on convergence, and dilates again as soon as the effort to converge the visual axes is relaxed. In these cases the pupils show the so-called myotonic reaction; they do not respond to light; they contract slowly through a wide range during a sustained effort to converge; often they remain small long after the effort ends and, when they dilate again, do so slowly.

Antipneumococcal Serums in Lobar Pneumonia.—According to Armstrong and Johnson, the course of primary lobar pneumonia due to the pneumococcal types I and II may generally be aborted if treatment with the homologous concentrated antipneumococcal serum is begun within the first three days of the disease. The course of primary lobar pneumonia due to types I and II may be favorably influenced if treatment with the concentrate is begun on the fourth or fifth day of the disease. It is doubtful whether the course of the disease is influenced to any extent if treatment is begun later than the fifth day. The contents of five phials, each estimated to contain 10,000 standard antipneumococcal units, generally suffice for early cases of type I infection. The optimal dosage for cases of type II pneumococcal infection, and for later cases of types I and II infection, is the contents of seven phials. The intervals between doses should be not less than six hours but may be conveniently extended to twelve hours if treatment is begun within the first three days of illness. Unconcentrated antipneumococcal serums of high titer may be used with success for early cases of moderate severity, and in adolescents. The serum must be given intravenously; by no other route may satisfactory results be obtained. Desensitization is unnecessary; 1 cc. of 1:1,000 solution of epinephrine hydrochloride should be administered subcutaneously whenever symptoms of shock are

present. The intravenous administration of serum is especially effective in aborting and eliminating toxic phenomena, cyanosis and delirium. The action of the serum appears to be specific. Considering the cases of type I and type II infection together, the authors treated eighteen of twenty-six patients by antipneumococcal serums within the first four days of the disease. In ten of these the pneumonia was aborted and in seven improvement was apparent. One patient showed initial benefit but relapsed and died. Eight were treated with serum on the fifth and sixth days; five were improved and three uninfluenced. These results sufficiently illustrate the supreme importance of early treatment.

1: 963-1008 (June 6) 1931

*Hume Lectures on Hemolytic Icterus. L. Dawson.—p. 963.
Some Surgical Aspects of Faulty Nutrition. R. McCarrison.—p. 966.
Treatment of Dysmenorrhea. B. V. Dunn.—p. 971.
Minor Surgery of Infancy. D. Levi.—p. 973.
Anesthetic Screen, Needle and Thimble as "Surgical Aids." W. I. de C. Wheeler.—p. 975.
Perforated Typhoid Ulcer: Three Successful Cases. J. B. G. Muir and S. C. Chia.—p. 976.
*Tuberculous Peritonitis Simulating Celiac Disease. E. C. Warner. —p. 977.

Hemolytic Icterus. — According to Dawson, the more closely hemolytic icterus is studied the more does doubt grow as to whether in the strict sense an acquired form exists. Manifestations early in life can be so slight as to pass unnoticed or be forgotten. The slightness or absence of one or more of the manifestations makes it easy for the condition to pass unnoticed. It is only when observation becomes stimulated and then extended to the patient or the patient's family or both that discovery ensues. For instance, a moderately enlarged spleen may be found in a patient of active life. Investigation may disclose a red cell count of 4,500,000, a fragility within the normal, a positive indirect van den Bergh test and absence of jaundice. If there is no disturbance of the patient's health and none of the members of the family have more typical forms of the condition, the cause of the splenomegaly remains a mystery. All the while, the marrow has been overtaxed, involved in overproduction of red cells to maintain equilibrium. But if the marrow fatigues as the result of untoward conditions, or the hemolytic process itself becomes accentuated and jaundice appears, there is the further possibility that the fragility may increase, and this, with an inherited overactive reticulo-endothelial system, may turn the scale, causing the symptoms of hemolytic icterus to appear. In the sense that latent defects may be accentuated so as to become clinically manifest, hemolytic icterus can be acquired, but the defects themselves are inborn.

Tuberculous Peritonitis.—Warner reports a case of tuberculous peritonitis in which there were present all the classic symptoms and signs of celiac disease. The patient was a girl who developed the disorder at the age of 2 years and 4 months. There was marked hypotonia and wasting, especially of the glutei. The stools were large, bulky, pale, mucoid and offensive, and consisted largely of split fat in the form of soaps and fatty acids. The abdomen was much distended with gas. The mental state was typical of the celiac child and there was a tendency to rachitic changes in the bones. The picture seemed complete, as there was no roentgen evidence of diseased abdominal lymph nodes, yet at necropsy an extensive tuberculous peritonitis was found, without any calcification in the nodes. The only points that were in favor of a diagnosis of tuberculous peritonitis in this case were the height of the pyrexia and the rather rapidly fatal termination of the disease.

Journal of Laryngology and Otology, Edinburgh

46: 369-448 (June) 1931

Frontal Sinusitis: Statistical Investigation. J. S. Fraser and J. P. Stewart.—p. 369.
*Treatment of Frontal Sinusitis by Intubation: Analysis of Sixty-Three Cases. D. Harmer and B. Russell.—p. 384.
*Treatment of Chronic Frontal Sinusitis. W. Howarth.—p. 397.
Advanced Case of Nasopharyngeal Fibroma Treated by Diathermy Coagulation and Roentgen Rays. H. V. Forster.—p. 402.

Treatment of Frontal Sinusitis.—During the last ten years, Harmer and Russell have treated sixty-three patients with frontal sinusitis by means of intubation. The operation has proved simple to carry out and absolutely free from danger. Because of its simplicity it has been possible to perform it on many patients to whom one would have hesitated to recommend more serious radical treatments. The aim of the operation is twofold. First, to provide free drainage and ventilation, both externally and internally. Secondly, to dilate the bony frontonasal canal without damaging its lining membrane. Intubation with an elastic tube fulfils both these requirements, and if the tube is slowly enlarged it does not cause irritation or inflammation. On the contrary, the lining of the sinus in most cases rapidly recovers. In successful cases, a straight passage from the nose to the sinus is obtained, through which a cannula can easily be passed. In some cases, after a period of years, it may be difficult to find the entrance to the infundibulum, especially if there is an obstruction in the nose, such as a deflected septum or enlarged ethmoid cell. But, failure to pass the cannula seldom results in a return of the symptoms. The cases in which the treatment is likely to fail are those in which there has been long-standing inflammation that has caused scarring of the soft tissues, and particularly those in which there have been numerous previous operations. In many of the latter the ducts no longer exist, having been replaced by masses of scar tissue. Another cause of failure has been involvement of other sinuses, notably when the opposite frontal sinus is infected and communicates with the one that has been intubated. In such cases, reintubation may be necessary.

Treatment of Chronic Frontal Sinusitis.—Howarth believes that the frontal sinus and the anterior ethmoid cells are nearly always simultaneously involved, and consequently any operation that is considered must be one that will drain both adequately. He is not much in favor of the stereotyped intranasal operation but prefers to remove as much of the anterior part of the labyrinth as may be necessary, and to do this as thoroughly as possible, relying on subsequent sounding to effect a cure of the overlying sinusitis.

Journal of Oriental Medicine, Dairen

14: 41-52 (May) 1931

On Epidemiologic and Clinical Observations on Encephalitis Epidemica in Dairen During 1919-1926. K. Ochiai.—p. 41.
Influence of Radium on Blood. K. Saito.—p. 45.
Action of Salts on Bacteriolysis. T. Komiyama.—p. 46.
Serum Albumin and Serum Globulin in Various Skin Diseases. T. Iwakiri.—p. 47.
On Variation of Sense Threshold Caused by Change in Surrounding Temperature. H. Iwatake.—p. 49.
Intraperitoneal Administration of Antivirus. Y. Kitaura.—p. 50.
Melanin Content of Skin of Arm in Japanese Embryos. K. Iwashima. —p. 52.

Kenya & East African Medical Journal, Nairobi

8: 35-62 (May) 1931

Further Kikuyu Beliefs and Superstitions: Ethical Standards. R. U. Gillan.—p. 36.
Laboratory Aids to Diagnosis of Syphilis. R. P. Cormack.—p. 45.
Staining of Malaria Parasites. P. C. C. Garnham.—p. 56.
Syringomyelia in African Native. N. McLean.—p. 58.

Lancet, London

1: 1171-1220 (May 30) 1931

*Maternal Disablement. W. B. Bell.—p. 1171.
*Studies on Nutrition in Relation to Immunity: Preliminary Communication. J. B. Orr, J. H. R. MacLeod and T. J. Mackie.—p. 1177.
*Actinotherapy at Tuberculosis Dispensary. G. Jessel.—p. 1182.
Porencephaly: Case. R. Strom-Olsen and M. B. Wales.—p. 1185.
Prolonged Administration of Artificial Respiration. P. Drinker.—p. 1186.

Maternal Disablement.—Bell states that, while 3,000 women die annually in England and Wales from the direct results of maternity, probably 5,000, at a most conservative estimate, die from the late results of childbearing, including cancer of the cervix. That is to say, more than 8,000 women are lost annually. At least 60,000 parous women, also, are crippled annually, many gravely, others, though less seriously injured, enough to cause ill health and disablement. Constitutional disorders form an appreciable percentage of all cases; and they are more immediately serious than local lesions, apart from acute sepsis. Trauma and infection are often associated and comprise about 75 per cent of all causes of disablement. In the present conditions with proper preventive obstetrics and by skilled reparative surgery the disablement from trauma and infection could be much reduced. To mitigate such a state of

affairs as that described, one must go further back than the antenatal period and insure a supply of healthy mothers by watching women from the neonatal period of life to maturity.

Nutrition in Relation to Immunity.—Orr and his associates made a survey of the nature of the diet and of the incidence of disease in two East African tribes with different dietary habits. The diet of one of the tribes consisted chiefly of cereals. The calcium intake was low. The vitamin content of the diet was not determined, but it is probable that there may have been a deficiency of one or more of the vitamins. The diet of the other tribe, consisting largely of milk, meat and raw blood, though defective in other respects, was rich in those nutrients that were deficient in the diet of the former tribe. In the tribe with the cereal diet pulmonary conditions, bronchitis and pneumonia accounted for 31 per cent of all cases of sickness, tropical ulcers for 33 per cent and phthisis for 6 per cent, compared with 4, 3 and 1 per cent, respectively, in the tribe with the meat, milk and raw blood diet. In this tribe the chief disease was rheumatoid arthritis, associated with chronic constipation. The cereal-eating tribe suffered generally from heavy infestation with intestinal parasites. The diet of the women was, on the whole, less deficient than that of the men. It was therefore thought that, if defective diet favored infestation, a difference might be found in the incidence of parasites as between men and women. An examination of the postmortem records of 104 serial unselected cases showed that infestation was nearly twice as frequent in men as in women, and records of examinations of feces showed 74 per cent of men infected as against only 49 per cent of women.

Actinotherapy at Tuberculosis Dispensary.—According to Jessel, artificial light treatment can be successfully given at tuberculosis dispensaries under the control of local authorities. It is especially useful in cases of lupus and allied skin conditions, adenitis with and without softening, and other superficial conditions. It is much less effective in the treatment of tuberculous disease of the larger joints and bones, which should be treated in special residential institutions. In the treatment of lupus a combination of general light therapy with local treatment (e. g., Kromayer lamp) is usually necessary and the carbon arc bath is to be preferred to the mercury vapor lamp for general irradiation. Prolonged exposure to weak carbons is preferable to brief exposure to strong cored carbons. It is efficacious, safe and particularly suitable for use by tuberculosis officers who have other duties to perform outside their dispensaries. To obtain the best results, actinotherapy needs frequently to be combined with various forms of local treatment; e. g., the use of suitable caustics in lupus and the aspiration or incision of abscesses.

1: 1221-1274 (June 6) 1931

*Neurology of Old Age. M. Critchley.—p. 1221.
Pathology and Etiology of Brain Abscess. W. Evans.—p. 1231.
*Surgical Treatment of Duodenal Ulcer. C. A. Pannett.—p. 1235.
*Divided Dosage in Radium Therapy. A. Eidinow and J. C. Mottram. —p. 1236.

Neurology of Old Age.—From routine neurologic examination of a large number of old persons, Critchley concludes that the state of the reflexes alters, and that the same interpretation of physical signs does not apply as in younger persons. Thus, the tendon jerks tend to become sluggish and are frequently lost. The ankle jerk illustrates this point especially well; with advancing years this tendon reflex becomes more and more difficult to elicit and finally disappears. So frequently does this occur, in the absence of other neurologic manifestations, that one is driven to the conclusion that absence of the ankle jerks in old age is without pathologic significance. The supinator, biceps and triceps jerks also become sluggish and may disappear, but not until after the loss of the ankle jerk. Sometimes the knee jerk behaves in the same manner, but here again it does not disappear until long after the ankle jerk has been unobtainable. This "normal" progressive sluggishness in the tendon responses is independent of local change in the fibromuscular structures, but the jerks may also disappear from various mechanical causes. Severe and long-standing cases of paraplegia in flexion lead to widespread contractures that render the tendon responses unobtainable. Similarly, changes within and around the knee and ankle joints frequently prevent the elicitation of the appropriate tendon jerk. The superficial reflexes also change in old age. Progressive difficulty in obtaining an abdominal response is well known, and indeed this change occurs at a relatively early date. The plantar response, however, usually persists as a characteristic flexor movement throughout adult life. At times, however, extension of the great toe occurs in old age in the absence of obvious disease of the pyramidal pathway.

Surgical Treatment of Duodenal Ulcer.—Pannett's experience in the treatment of duodenal ulcer corroborates that of other surgeons that, like the analogous case of gastric ulcer, local removal is insufficient. It is necessary to take away a certain portion of the stomach as well. But even this will not certainly protect every patient from recurrent ulcer, though such an ulcer is excessively rare. Although more recurrent ulcers have been reported after the second operation of Billroth, the author has not had one in his series, probably because more of the antrum is taken away than in the small first operation of Billroth done in his earlier cases. However, a man of 45 came under his observation who two years before had had a posterior gastrojejunostomy for a duodenal ulcer. No relief occurred, so the pylorus was resected eight months later. Four months after this an extensive Polya resection was performed for a gastrojejunal ulcer. Less than a year later he came under the author's care. He was emaciated and evidently had a large gastrocolic fistula, with fecal vomiting and diarrhea. At operation it was impossible to remedy this, as the marginal ulceration had been so extensive as to lay the stomach and colon into one cavity. Of the patients whose complaint is unrelieved by medical treatment, 69 per cent will be cured by gastrojejunostomy and 81 per cent by gastroduodenal resection.

Divided Dosage in Radium Therapy.—Eidinow and Mottram found that Jensen's rat sarcoma is just as sensitive to divided dosage in radium irradiation as to a single dose and that irradiating this tumor with a view to causing its disappearance and at the same time avoiding injury to the overlying skin and normal tissues can be accomplished more successfully by divided dosage than by a single exposure. It is clear that a much larger dose of radiation can be set free in a tumor without the production of an erythema of the skin by divided dosage than by a single exposure, and that this larger dose will have its full effect on the tumor, since its power to recover in the intervals between exposure is much less than in the case of the skin. These results strongly suggest that, in the external application of radium or roentgen rays in the treatment of tumors, divided dosage should be given a thorough trial. How much the dose should be divided and what should be the intervals of time will probably depend on the growth rate of the tumor and on its kind; only by clinical research can this be discovered.

Medical Journal of Australia, Sydney

1: 591-618 (May 16) 1931

Public Health in Australia. J. H. L. Cumpston.—p. 591.
"Percain": New Local, Regional and Spinal Analgesic or Anesthetic. R. G. Brown.—p. 598.
Gonin Operation for Cure of Idiopathic Retinal Detachment. J. B. Hamilton.—p. 600.

1: 619-648 (May 23) 1931

Some Worm Infestations of Man in Australia. G. M. Heydon and A. K. Green.—p. 619.
On Apparent Diminution in Skeletal Muscle Tonus Following Removal of Lumbar Sympathetic Trunk. G. Phillips.—p. 628.

South Africa M. Assn. Journal, Cape Town

5: 301-336 (May 23) 1931

Medical Service for Natives in Rural Areas. A. W. Burton.—p. 303.
Treatment of Cancer by Radium and Roentgen Rays. J. van Roojen. —p. 307.
Observations and Reflections on Cancer in General Practice. C. E. L. Burman.—p. 311.

Tubercle, London

12: 385-432 (June) 1931

Investigation and Assessment of One Hundred Cases of Pulmonary Tuberculosis. S. L. Cummins.—p. 385.
Formation of Asbestosis Body in Lung. S. R. Gloyne.—p. 399.
Recent Developments in Study of Tissue Reactions in Tuberculosis. R. S. Cunningham.—p. 404.

Bulletin de l'Académie de Médecine, Paris

105: 775-830 (May 25) 1931

Provision for Serum of Previously Affected Patients in Anticipation of a Possible Reappearance of Poliomyelitis. Marfan, L. Martin, Guillain, Nobécourt, Pettit, Levaditi and A. Netter.—p. 779.
Combined Antityphoid and Antidiphtheritic Vaccination in Army. C. Dopter.—p. 794.
*Lipoid Nephrosis in Course of Sclerous Nephritis Terminated by Pneumococcal Infection with Lipuria. C. Achard, A. Codounis and A. Horowitz.—p. 813.
*Causes of Rarity of Cancer in Egypt. Schrumpf-Pierron.—p. 818.
Sinocarotid Tonus: Changes in Persons with Tabes Dorsalis. D. Danielopolu and L. Caffé.—p. 823.

Lipoid Nephrosis.—Achard and his associates state that the important causes of lipoid nephrosis are syphilis, tuberculosis and pneumococcal infections. Their case illustrates how an azotemic and hypertensive chronic nephritis may, under the influence of a pneumococcal septicemia, be accompanied by lipoid nephrosis. Since 1927 the patient had had a mixed type of nephritis with dropsy, azotemia and hypertension. Not at any time, despite the marked albuminuria and intense edema, had lipoid nephrosis been ascertainable, and the search for birefringent bodies in the urine was always negative. It is true that the amount of lipids was increased slightly but that of cholesterol remained normal. There was present also a hypoproteinemia. Such a disturbance in the protein-lipid equilibrium is noted often in hydropigenous nephritis. But attention must be called to the fact that the albumin quotient had remained normal. A short time later there suddenly developed a pneumococcal infection that terminated fatally in ten days. From the very beginning of the condition, birefringent bodies were found in the urine in great abundance. A relative hypocholesteremia also developed, caused, the authors believe, by the acute pneumococcal infection. After a week the patient became comatose and died two days later. Necropsy revealed typical lesions of chronic nephritis with massive sclerosis and indisputable evidences of lipoid nephrosis.

Causes of Rarity of Cancer in Egypt.—Schrumpf-Pierron has established the fact that cancer is rare in Egypt and he has investigated the cause of its rarity. In 1891 at Cairo there were, among 19,529 deaths, only 29 due to cancer; i. e., 0.09 per cent. At the same time the proportion of deaths due to cancer amounted in France to 4.6 per cent and in England to 4.3 per cent. In Egypt from 1918 to 1928 (inclusive) the average number of deaths due to cancer was 0.23 per thousand persons. Statistics were available only for cities with a population of more than 5,000. It is unusual that in Egypt only six out of each thousand deaths are caused by cancer. At the same time, as statistical studies show, in nine provinces of Italy the average number of deaths due to cancer in each thousand deaths was 47.99. The author thinks that the figures for Egypt were too high, first because only cities with a population of more than 5,000 were included, and it is a well established fact that cancer is much rarer in the country than in cities. The second reason is an indirect one. There exists in Egypt a special cause of cancer, *Schistosoma haematobium*, which is quite rare in Europe. Before leaving for Egypt the author studied the cancer problem in Berlin and in Paris. He reports the following: In Berlin in 1,800 patients he observed 58 cancers, or 0.32 per cent. In Paris in 1,230 patients, 71 cancers, or 0.58 per cent. In Egypt in 7,040 patients he observed only 62 cancers, or 0.08 per cent. By utilizing the hospital records of Egyptian institutions, the author found that cancer of the gastro-intestinal tract is quite rare in Egypt in comparison with the relatively high figure of the so-called mesenchymal neoplasms. Menetrier states that for every 283 epitheliomas there are 74 sarcomas. But, in Egypt, sarcomas are almost as frequent as epitheliomas. Many of the sarcomas encountered are of the lymphosarcoma type. The author established the fact that, in Egypt, malignant tumors are at least ten times less frequent than in Europe. He adds also that ulcers of the stomach, pylorus and duodenum are as rare in Egypt as cancer of the stomach. In connection with the causes of such a condition, he considers first the climate. It is well known that a tropical climate prevents, to a certain degree, cancerization. But the climate of Egypt is not a tropical one and there is not more cancer in Alexandria with a Mediterranean climate than in Upper Egypt, where the temperature is much higher. One has to exclude also the race predisposition. European and American Jews are quite predisposed to cancer while it is almost unknown among the Egyptian Jews, in spite of the fact that they live in the same manner as the native Egyptians. After eliminating these two factors, the author considers the factor of alimentation. Analyses of Egyptian soil reveal that it contains from fifteen to seventeen times more magnesium than soil from one of the most fertile fields of France. The waters of the Nile contain from 6 to 22 mg. of magnesium per thousand cubic centimeters. This is why the Egyptian peasants who live in the country and drink the unfiltered water of the Nile rarely have cancer, whereas the inhabitants of large cities who drink filtered water are frequently affected with it. The coarse salt used by the Egyptian peasants to season their food contains a large amount of magnesium chloride. The author concludes that the frequency of cancer is inversely proportional to the richness of the soil in magnesium. He agrees that the question needs, of course, further study and investigation.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

47: 731-793 (May 18) 1931

Polyneuritic Syndromes: Myopathic Forms. L. Bériel and A. Devic.—p. 732.
*Specificity in Therapy: Action of Antisyphilitic Medicaments. A. Sézary.—p. 734.
Generalized Endotheliitis: Interrelation of Monocytosis and Reticulo-Endothelial Tissue: Case. R. Debenedetti and P. Florentin.—p. 739.
Subacute Articular Tuberculosis: Case. F. Bezançon, E. Bernard, Oumansky and Gaucher.—p. 742.
Renal Amylosis: Pure Azotemic Form. P. Abrami, Bertrand-Fontaine, A. Lichtwitz and M. Laudat.—p. 753.
*Anaphylactic Rheumatoid Purpura Provoked by Muscular Effort. Sézary, Horowitz and Rivoire.—p. 760.
Speed of Erythrocyte Sedimentation in Articular Disorders. M. P. Weil, C. O. Guillaumin and M. L. Laurencin.—p. 768.
*Cause of Hepatomegalia: Dissociation of Etiologic Complex of Alcoholism and Syphilis: Case. Creyx.—p. 780.
*Cerebrospinal Meningitis Due to Bacterium Cutis-Commune: Case. Laffitte and Merle.—p. 783.
*Hemorrhagic Agranulocytosis: Case. G. Laurès and M. Kenig.—p. 785.
Aurotherapy and Artificial Pneumothorax. W. Jullien.—p. 789.

Specificity in Therapy.—Sézary studied the problem of specificity in therapy, particularly in regard to antisyphilitic medicaments. He states that specificity in therapy is applicable not only to syphilis and to articular rheumatism but also to mycosis, amebic dysentery, and probably also to malaria. The specific medicaments used in these ailments consist of arsenic, bismuth, mercury, iodine, sodium salicylate, emetine and quinine. The author emphasizes that the specificity of these substances is far from being absolute. The study of antisyphilitic remedies illustrates particularly this fact. The arsphenamines, for example, are used with success in the treatment of Dühring's disease, lupus erythematosus, tuberculids, herpes zoster, psoriasis, and even gonorrheal rheumatism, erysipelas, puerperal septicemia and asthma. The injections of bismuth produce remarkable results in lupus erythematosus, in various centrifugal erythemas and sometimes in psoriasis. Mercury has a marked action on psoriasis and on certain infantile eczemas. Iodine and the iodides are specific not only in tertiary syphilis but also in mycosis and in certain cases of chronic nonsyphilitic rheumatism. Emetine also cures lung abscess not of amebic origin. Thus, the specificity of these medicaments is so uncertain and indefinite that some of the indications are completely inexact. The author emphasizes the fact that in vitro neither arsphenamine nor bismuth has any direct action on *Spirochaeta pallida*. When the spirochetes are placed in a 1:125 solution of neoarsphenamine and are examined under an ultramicroscope, it is noted that they fully conserve their mobility and vitality. He believes that there has to be some relation between the remedy employed and the reaction of the organism to the disease. This explains why mercury is so active in the beginning of syphilis and why the iodides are more active in tertiary than in secondary syphilis. The difference in the reactions of the affected organism explains the differences in the activity of the remedies. This reaction, which as yet cannot be defined by its cytologic formula, is so complex that the author does not attempt to define it. One must consider in connection with it the nature and the virulence of the micro-organism as well as the humoral constitution of the patient.

Anaphylactic Rheumatoid Purpura.—Sézary and his collaborators describe a case of purpura that is of interest from various points of view. Clinically the ailment was distinguished by the large number of purpuric patches and by their repeated recurrence, which prevented the patient from doing active work. The eruption was polymorphous; besides petechiae there were papules due to dermal infiltration, as well as the edematous papules of urticaria. The syndrome never developed after ingestion of foods, regardless of what they were. But the injection of various protein solutions or of sodium thiosulphate did provoke it. In regard to the pathogenesis of this type of purpura, one has to recall the importance of its accompanying pruritus. It often includes pruriginous papules of typical urticaria. This fact, together with the well known part that muscular contraction plays in the etiology of certain urticarias, is in favor of the anaphylactic nature of the condition, because urticaria appears to be one of the best defined anaphylactic conditions. In the treatment of purpura the main object must be desensitization. The authors used minute doses of peptone subcutaneously and intradermally. They began with 0.0025 Gm. of peptone and progressively increased the dose to 0.005 and 0.0075 Gm. They also administered intravenous injections of 20 per cent solution of sodium thiosulphate, gradually increasing the dose. The treatment led to complete recovery of the patient.

Cause of Hepatomegalia.—At the end of his report of a case of hepatomegalia, Creyx gives the following summary: Since the principal symptoms in this case were anorexia, hemorrhages, emaciation and digestive disorders, one had to consider the syndrome of hypertrophy of the liver which resembles the picture of anascitic hypertrophic cirrhosis of Hanot and Gilbert. The hemorrhages were profuse and there were noted some abnormalities in the coagulation of the blood. Clinically the condition seemed to be the result of chronic alcoholism, but a strongly positive Wassermann reaction indicated syphilis despite the absence of a history and of clinical phenomena of it. The author recommended to the patient a light diet and total abstinence from alcoholic beverages; he also gave him daily an intravenous injection of 1 cc. of a 1:100 solution of mercuric cyanide. At the end of the treatment, which consisted of twenty injections, the condition of the patient had greatly improved, the appetite had come back and he had gained 3 Kg. The objective signs, also, were modified; the inferior border of the liver had almost regained the region of the false ribs and the hemorrhages from the mucous membranes as well as from the skin had become insignificant.

Cerebrospinal Meningitis.—Laffitte and Merle studied a case of meningitis due to *Bacterium cutis-commune*. Their conclusions are as follows: Cerebrospinal meningitis due to *Bacterium cutis-commune* is extremely rare. The micro-organism is a common one and is often encountered in acute or chronic suppurative conditions; most authors, however, consider that it does not possess pathogenic properties; it is always associated with other pyogenic micro-organisms. In the authors' case, both direct examination of the cerebrospinal fluid and cultures revealed that *B. cutis-commune* was the only micro-organism present. The elevation of the patient's temperature, which accompanied the changes in the cerebrospinal fluid, did not leave a doubt with regard to the pathogenic rôle of the micro-organism isolated. Intraspinal injections of antidiphtheritic serum had a definite effect; the general condition of the patient improved. The authors attribute the favorable changes in the cerebrospinal fluid to the action of the serum. Further experimentation will be necessary to demonstrate whether there are any relations between *B. cutis-commune* and the true diphtheria bacillus.

Case of Hemorrhagic Agranulocytosis.—Laurès and Kenig report a case of hemorrhagic agranulocytosis and give the following summary: A man, aged 26, suddenly developed a hyperacute infectious syndrome, with an ordinary sore throat, persistent hemorrhages from the skin and the mucous membranes, palatine and gingival necrosis, leukopenia and agranulocytosis without severe anemia; on the sixth day of the illness, he died. Necropsy revealed interstitial and capsular sclerosis of the spleen without hyperplasia of the tissue in this organ or in liver and without nondifferentiated white cells. The case was diagnosed as agranulocytosis.

Gynécologie et Obstétrique, Paris

23: 289-384 (April) 1931

*Maillard's Coefficient as Diagnostic and Prognostic Point in Hyperemesis Gravidarum. J. Voron and H. Pigeaud.—p. 289.
Surgical Aspect of Modern Obstetrics. Turenne.—p. 304.
*Fallopian Tubes: Their Congenital Impermeability. N. Markoff.—p. 323.
*Radiotherapy in Cancer of Uterus. M. Donaldson.—p. 330.

Maillard's Coefficient in Hyperemesis Gravidarum.—Voron and Pigeaud studied the variations of Maillard's coefficient in fifteen cases of hyperemesis gravidarum. The typical syndrome by which they have been characterized was rapid emaciation, absolute intolerance to solid or liquid food, permanent acceleration of pulse, oliguria and acetonuria. Maillard's coefficient was observed systematically in these patients for two or three days, and an interesting curve was drawn in each case which represented the variations in the height of the coefficient. A comparative study of these curves and most careful observations allowed the authors to make the following statement: In all patients who really demonstrated the syndrome of hyperemesis gravidarum at the time they entered the service, the coefficient of Maillard was always over 11. In spite of the apparent gravity of the clinical signs present, in all cases in which the coefficient of Maillard was below 15 the recovery under simple therapeutic measures was prompt and complete. In cases in which the coefficient of Maillard was over 25, the disease was of a particularly severe form and the question of therapeutic abortion was considered. As to the observations in which the coefficient of Maillard was found between 15 and 25, the disease ran a rather mild course and ended finally under correct medical treatment in recovery. The decline in the curve of Maillard's coefficient allows one to observe step by step the progress of such recovery. The variations in the coefficient of Maillard follow exactly the changes that take place in other symptoms and in the course of the disease itself. It seems therefore that this coefficient possesses considerable prognostic value, which is aided by other principal symptoms of the illness. It has also the great advantage of being expressed in figures, making possible the drawing of a valuable curve, the usefulness of which is demonstrated by the fact that the authors never experienced a mistake in the coefficient in the course of their comprehensive investigations.

Congenital Impermeability of Fallopian Tubes.—Markoff investigated the permeability of the fallopian tubes in sixteen fetuses of different terms and sizes. He states that his observations gave him valuable data which have a rather important significance in the pathogenesis of sterility in women, for they explain many obscure points in this connection. The author found that in many instances both tubes of the fetus were impermeable. It was ascertained by insufflation that the ampullar ends are permeable for thin catheters. By using this method of investigation one can easily see that the congenital impermeability occupies the interstitial parts of the tubes—a fact of great importance. The older the fetus is, the higher the absolute pressure must be for the insufflation of air into the tubes. The height of the pressure varies in the same uterus with the right and left tubes. It is also interesting to note that in many instances the tubes of the fetuses, like the tubes of some sterile women, resist insufflation. On the basis of such results one has to admit that many sterile women have a congenital impermeability of the tubes which produces permanent sterility. Naturally in most of them (as in the fetuses examined) the impermeability must be bilateral. Women with a unilateral impermeability have a diminution in their power of conception.

Radiotherapy in Cancer of Uterus.—In his general review on the subject, Donaldson states that in cases which were recognized in time and in which treatment was begun immediately, the patients remained completely cured. In the more advanced cases one obtains a remarkable temporary improvement. The patients gain in weight and state that they never felt so healthy. But at the end of one and sometimes of two years they become pale, look toxic and complain frequently of swelling of the lower extremities. On examination the cervix and the vagina appear healthy, but deep in the pelvis one can feel a neoplasm, which ulcerates finally into the rectum, the bladder or the vagina and the patient dies from cachexia. The actual problem at present is to find means for preventing metastases in the lymph nodes and the deep structures of the pelvis.

Médecine, Paris

12: 1-96 (April) 1931

*Hemoptysis. A. Jacquelin.—p. 1.

Hemoptysis.—Jacquelin does not consider the hemoptysis that occurs in the upper air passages as real hemoptysis; reference to the upper air passages naturally excludes hemorrhages in the buccal cavity or in the pharynx. He divides all cases of hemoptysis into the following four large groups: (1) tuberculous hemoptysis, discussing them from clinical, diagnostic, prognostic, pathogenic and therapeutic points of view; (2) hemoptysis in nontuberculous bronchopleuropulmonary conditions and hemoptysis of cardiac origin; (3) hemoptysis of circulatory origin, and (4) hemoptysis due to mechanical or general causes. A comprehensive description of each group is given.

Revue Française de Pédiatrie, Paris

7: 121-256, 1931

Syndrome of Lipoidal Nephrosis in Infancy. R. Debré and J. Marie.—p. 121.
Pulmonary Anomaly: Roentgenogram of Azygos Lobe. R. Debré and M. Mignon.—p. 143.
*Alimentary Fever. H. Finkelstein.—p. 161.
*Tuberculous Peritonitis Treated by Heliotherapy at High Altitudes: One Hundred and Fifty Cases. Cappelle.—p. 174.
Congenital Malformations of Biliary Tract: Anatomic Considerations. M. Péhu and P. Girard.—p. 205.
*Alimentary Fever. M. Lelong and J. Chabrun.—p. 229.

Alimentary Fever.—Finkelstein states that knowledge of different experimental fevers brings out a good explanation of the thermic elevations that occur in the course of acute digestive disorders in children. It is observed that in these cases the losses of water through diarrhea and vomiting play an important part, the fever being brought on earlier when the loss of water affects primarily the portal system. It is evident also that the conditions are quite variable in these cases and depend on different factors, provided the degree of exsiccation that is necessary for invoking the febrile reaction is involved. Some of these factors are as follows: rapidity of loss of water, great individual aptitude of the child to compensate the disorders of hydric metabolism by bringing into play the central regulating apparatus and, finally, the kind of food, since the capacity of food to increase fever is indirectly proportional to its content of water and directly proportional to its content of protein and sodium chloride. This explains also why fever does not disappear always until the weight curve has become horizontal or ascending. Although the author twenty-five years ago proposed the name of alimentary fever for the condition described, he now believes that the essential factor is not the ingestion of food but the abnormal loss of water and that the name should be changed from "alimentary fever" to "exsiccation fever."

Tuberculous Peritonitis: Treatment by Heliotherapy at High Altitudes.—On the basis of numerous and extensive observations, Cappelle draws the following conclusions: 1. Pleuroperitonitis is the most frequent manifestation encountered at the beginning of tuberculous peritonitis; diverse degrees of pleural reaction may precede, accompany or follow the peritoneal attack (95 cases presenting pleural reaction among 150 patients). Most vigilant care must be given by the practitioner to the condition of the pleura in a patient during the whole course of the illness. 2. Tuberculous peritonitis is a condition in which, generally, surgery is not indicated. Surgical intervention should be applied only in the case of appendicitis or intestinal obstruction. Laparotomy has a therapeutic indication when the patient cannot be placed in necessary climatic environments for solar treatment of his peritoneal condition. 3. The prognosis of tuberculous peritonitis depends on the amount of the urinary output. Each crisis observed does not lead to recovery except by increasing the quantity of urine, the stimulating action of the climate being aided, if necessary, by calcium chloride or by subcutaneous injections of dextrose. 4. Tuberculous peritonitis is a condition that is cured in almost every case in which the patient can benefit for the desired length of time from the solar treatment at high altitudes. Heliotherapy should not be given to patients during a crisis; i. e., those presenting, with a weak general condition, marked transitory disorders (especially diarrhea), various painful paroxysms and a temperature above 38.5 C. (101.3 F.) on the average. In such cases the climate of the high altitude, as well as the aeration, the medical supervision and various adjuvant drugs may correct the most desperate conditions. Heliotherapy may be given without limitation or interruption in all cases of chronic tuberculous peritonitis, regardless of the amount of fibrous peritoneal exudate or ascites to be exposed to the rays. The facts observed and the results reported fully justify the conviction that patients under proper medical supervision are able to stand daily from four to five hours of insolation. 5. The solar cure at high altitudes, applied in the treatment of tuberculous peritonitis in the group of adolescents studied by the author, gave complete recovery in 82 per cent of the cases, without sequelae. It brought about a complete change in the patients, allowing 92 per cent of them to recommence a normal life.

Fever and Alimentation.—Lelong and Chabrun report their observations on the so-called scorbutic fever. Their conclusions are as follows: In the general group of alimentary fevers of nurslings, scorbutic fever—fever due to deficient nutrition—deserves a separate place. It may appear simultaneously with well known scorbutic disorders. But, as the authors state, one must know also that it may precede, sometimes for a long time, typical scurvy (prescorbutic fever, or, more correctly, the initial fever of scurvy). It may appear also as the sole clinically important sign and produce an abortive form of scurvy with fever. In any case, it disappears instantly on the addition to the regimen of a sufficient quantity of vitamin C.

Semaine des Hôpitaux de Paris

7: 225-256 (April 30) 1931

*Renal Tuberculosis Due to Trauma in Lumbar Region. Sergent.—p. 225.
Preventive Hygiene in Dermatoses. L. Lortat-Jacob.—p. 235.
*Left Gallop Rhythm. C. Lian.—p. 243.

Renal Tuberculosis.—Sergent reports a case of renal tuberculosis that developed following a trauma of the lumbar region. He emphasizes the important rôle of trauma as an exciting cause in all similar cases. He believes that traumatism exercises a localized influence on tuberculosis. Therefore, one has to admit that traumatism provokes a vascular rupture and consequent to it a hemorrhage. The author reviews cases and various reports of many other investigators and concludes that their observations do not differ much from his own.

Left Gallop Rhythm.—According to Lian, left gallop rhythm is a sign of great prognostic value. This sign is evidence of a serious disturbance in the function of the left ventricle. Nevertheless the condition is not always fatal. The author states that persons with gallop rhythm may live for years. He concludes by reviewing in detail the great importance of this sign from various points of view.

Annali Italiani di Chirurgia, Naples

10: 369-464 (April 30) 1931

Course of Certain Morbid Conditions of Abdominal Cavity After Division of Vagus Nerve Below Diaphragm. G. Ceccarelli.—p. 369.
Rare Disorder, of Dyskeratosic Type, of Mammary Region. C. Gargano.—p. 387.
Alkali Reserve and Azotemia After Experimental Anesthesia with Ethylene and Ether. G. Nogara.—p. 398.
Biliary Peritonitis Without Perforation. O. Pepi.—p. 410.

Archivio Italiano di Chirurgia, Bologna

28: 445-548 (April) 1931

Adamantinoma: Surgical Treatment: Case. L. Martinelli and G. Pototschnig.—p. 445.
Stenosing Tumors and Pseudotumors of Right Hemicolon: Operation: Six Cases. G. Bolognesi.—p. 473.
Peritoneal Pseudomyxoma of Appendicular Origin: Case. G. Gucci.—p. 525.
*"Umbilical Depression" as Characteristic Symptom of Certain Forms of Ileus Due to Meckel's Diverticulum Fixed to Umbilicus: Case. C. Leo.—p. 531.

"Umbilical Depression" in Certain Forms of Ileus.—Leo states that the presence of a deep funnel-shaped umbilical depression at the center of the distended abdomen, in patients with syndromes of intestinal obstruction caused by mechanical ileus, is a clear indication that Meckel's diverticulum is adherent to the umbilicus. The phenomenon is of diagnostic, prognostic and therapeutic value: Its early and constant appearance, whenever the two necessary factors (increased intra-abdominal pressure and persistence of the vitelline duct and its adherence

to the umbilicus) coexist, permits one to make a diagnosis with certainty of the type of intestinal obstruction. The prognosis with regard to the patient's chances of living is rather uncertain because the type of intestinal obstruction due to Meckel's diverticulum adherent to the umbilicus is the gravest among the entire group of intestinal occlusions. The phenomenon is also of therapeutic value because it points out the advisability of immediate surgical intervention, by means of which the patient's chances for life are greater than if he is submitted to a late operation. The anatomic observations of a case are reported.

Clinica Pediatrica, Modena

13: 265-348 (April) 1931

*Stimulative Action of Mercury on Processes of Growth and Metabolism. E. Mallus.—p. 265.
Form of Osteodystrophia in Early Childhood. M. Giuffrè.—p. 297.
Use of Fish in Children's Diet. D. Corda.—p. 320.

Stimulative Action of Mercury on Processes of Growth and Metabolism.—Mallus studied experimentally the influence of mercury on metabolism in young organisms: a group of atrophic but otherwise healthy children (neither syphilitic nor tuberculous) and several groups of animals. The mercury was employed in the form of an ointment or of mercuric chloride. The results were frankly distinct, depending on the dose. Small doses (from 0.08 to 0.1 Gm. of a 33 per cent mercury ointment, or from 0.25 to 0.3 mg. of mercuric chloride per kilogram of body weight) exerted a frank stimulative action on growth and metabolism, inducing a rapid and constant increase of weight, chest measurement and the signs of robustness; a marked and constant increase of the red corpuscles and the hemoglobin, and slight variations in the white corpuscles, with a prevailing increase in polymorphonuclears. The nitrogen metabolism underwent profound changes, with a marked increase of the total urinary nitrogen, constant values of the urea and the uric acid, and absence of pathologic elements. Toxic doses, however, may cause, with characteristic renal changes, a decrease of weight and a grave retention of nitrogen. The author considers that mercury in extremely small doses exerts a beneficent stimulative action on metabolic cellular activity and on the erythropoietic function of the bone marrow, with favorable reactions on the processes of growth. These facts constitute a special indication for its use in atrophic and hypotrophic conditions that have not reached irreparable limits.

Riforma Medica, Naples

47: 593-632 (April 20) 1931

*Constitutional Symptom for Diagnosis of Doubtful Cases of Uterine Myofibroma. L. de Gaetano.—p. 595.
Absence of Clinical Signs of Hyperhemolysis in Chronic Anemias and in Hepatomegalia of Neoplastic Nature. E. Greppi.—p. 597.
Pathogenicity of Endameba Coli. G. Penso.—p. 601.
Primary Sarcoma of Lymph Nodes: Case. G. Prussia.—p. 606.

Diagnosis of Doubtful Cases of Uterine Myofibroma.—De Gaetano has observed that uterine myofibromas develop more commonly in women of somewhat masculine appearance, with a brown complexion, robust, full-blooded, with down on the upper lip, the chin, over the linea alba and on the limbs, and often with nevi that are more or less hairy. Such women sometimes (not always, but especially when they are of advanced age) have a tendency to obesity, with deformation of the anatomic lines, taking on the somatic appearance of robust, corpulent, brown-complexioned matrons. To such a morphologic constitution corresponds a virile, energetic, strong willed temperament. Such women may manifest an exaggerated libido and sometimes a leaning toward their own sex. Morphologically their constitution may be megalosplanchnic. The endocrinosympathetic apparatus is of course important in the determination of such a constitution. The author has used this constitutional symptom for the diagnosis of doubtful cases of uterine myofibroma. He reports four cases in which by means of this symptom he was able to establish a diagnosis of myofibroma. In the first two cases the tumors were so soft, through degeneration and edema, that they gave the sense of fluctuation and suggested the diagnosis of ovarian cyst; in the third case the diagnosis was not easy, because the tumor was located in the true pelvis (others had given a diagnosis of cystoma); and in the fourth case marked obesity and an enormous umbilical hernia prevented the determination of the consistency of the tumor. In this case, diagnoses of cysts and of hydronephrosis had been made. In all four cases, surgical intervention confirmed the diagnosis of myofibroma.

47: 633-668 (April 27) 1931

*Septicemia Due to Staphylococcus Tetragenus. G. Battistini.—p. 646.
Hydrogen Ion Concentration in Blood of the Aged. G. Maragliano.—p. 649.

Septicemia Due to Staphylococcus Tetragenus.—Battistini's study of a case of septicemia due to *Staphylococcus tetragenus* leads him to these conclusions: 1. This microorganism, a common saprophyte of the oral cavity, may, under certain conditions of organic weakness, acquire notable virulence and become the agent of septicemia of long duration (in his case, five months). 2. Its presence may explain a selective pathogenic action on the more delicate organs—heart and kidneys (in his case, endocarditis and glomerulonephritis). 3. The tonsils may be the point of departure of a septic infection. 4. An autovaccine constitutes, in these types, one of the most effective forms of treatment.

Archiv für Verdauungs-Krankheiten, Berlin

49: 129-262 (April) 1931

Experimental Investigations on Action of Spinach Extract. H. Kalk and K. Nissen.—p. 129.
Some Pathologic Conditions of Gallbladder. M. Einhorn.—p. 144.
*Determination of Function of Glands of Fundus and of Pylorus by Clinical Method of Combination Test for Gastric Function. N. Henning and E. Bach.—p. 155.
Relation Between External and Internal Secretions of Pancreas in Diabetes Mellitus. A. N. Wolodin.—p. 168.
Action and Practical Value of Mixture of Insulin and of Sodium Desoxycholate. E. Steinitz and E. Thau.—p. 201.
*Giardia Intestinalis Diseases in Human Beings. K. Brucke.—p. 216.
*Pains in Right Upper Quadrant of Abdomen in Gastric Catarrhs. L. S. Schwarz, M. L. Kapusto and S. S. Dekussar.—p. 232.
*Influence of Histamine on Acidity Conditions of Stomach in Hyperthyroid Diseases. F. Heimann.—p. 244.

Determination of Function of Glands of Fundus and of Pylorus.—The method employed by Henning and Bach is as follows: From the fasting stomach of the patient the secretion is withdrawn by means of a duodenal catheter. The same procedure is repeated twice at intervals of ten minutes. The patient is advised not to swallow the saliva in the course of the test. Following withdrawal of the third portion, the psychic phase occurs. An appetizing breakfast is placed before the patient, so that he can both see and smell it. Now the gastric secretion is again withdrawn at intervals of ten minutes until after thirty minutes the breakfast is taken away. Then, by the administration of a caffeine test drink through a catheter, the chemical phase is begun; namely, the stimulation of the mucous membrane of the antrum. The test is continued in the manner recommended by Katsch and Kalk. If the congo red test remains negative in the withdrawn portions, histamine injections and chromoscopy are resorted to. The authors found that with this test it is possible to detect isolated functional disturbances of certain portions of the mucous membrane. Psychic inhibitions of the gastric secretion during the first phase can be designated as functional achylia of the fundus. The second phase, which is the result of the function of the antrum, is much less dependent on psychic influences. Isolated antrum achylia is characterized in the combined acidity cure by the absence of the second phase in case of retained psychic phase. The isolated antrum achylia is observed only in organic diseases, and its characteristic acidity curve is also noted after resection of the stomach, provided the function of the fundus glands is preserved. In some cases (most of them with hyperacidity) neither psychic nor chemical stimulation increased the acidity curve. It is assumed that the maximal secretion before the stimulation was the cause of this.

Giardia Intestinalis Diseases.—In the duodenal contents of nineteen patients with gastro-intestinal disorders or with disturbances of the biliary tract, Brucke discovered *Giardia intestinalis*. *Giardia intestinalis* is an etiologic factor of these diseases. Every local or general disturbance that reduces the function of the intestinal wall predisposes for *Giardia intestinalis* disease. Eosinophilia does not exist in giardiasis but frequently there is a monocytosis or a lymphocytosis, or the two conditions are combined. If the latter two conditions exist in disorders in the upper portion of the abdomen, the possibility of the presence of *Giardia intestinalis* should be considered. Catarrh of the colon, which existed in six of the patients, may have

been the primary disease or may have been caused by disturbances in the upper portions of the intestine. In four patients an involvement of the liver could be demonstrated; in six cases it was probable. In two instances there was a secondary, chronic pancreatopathy. For the treatment of giardiasis the author recommends sodium dehydrocholate, acetarsone, neoarsphenamine and duodenal irrigations with magnesium sulphate.

Pains in Abdomen in Gastric Catarrhs.—Schwarz and his associates report that, in the examination of forty-two patients who complained of pains in the right upper quadrant of the abdomen and whose ailments had been diagnosed as "stomach catarrh," they found that the cause of the pains was a latent inflammation of the gallbladder, a so-called cholecystitis larvata. The cholecystitis larvata is most frequent in patients with anacidic gastritis. Duodenal probing and careful roentgen examination of the stomach and of the intestinal canal aid in the detection of the real nature of the pains in the right upper quadrant of the abdomen. In many instances there are changes in the right portion of the colon (typhlostasis, pericolitis dextra), which are of great significance in the development of diseases of the gallbladder. In cases with negative or decreased acidity, a culture of the duodenal contents yielded growths of *Bacterium coli*, of staphylococci and of *Proteus*. In patients with normal gastric secretion the culture remained sterile. In twelve instances, *Giardia intestinalis* was found in the duodenal contents. Tests of the bilirubin content of the serum revealed that in all cases it was double the highest normal quantity.

Influence of Histamine on Stomach in Hyperthyroid Diseases.—Heimann directs attention to the fact that in the course of endocrine disorders, especially in disturbances of the thyroid function, gastro-intestinal disorders are often noted. Following a review of the literature, he reports his own tests of the gastric secretion of patients with hyperthyroidism. His method was as follows: The patients were given a test drink of 300 cc. of a 0.2 per cent solution of caffeine. A few days later they were given the same stimulating drink and simultaneously received a subcutaneous injection of 1 cc. of a 1 per cent solution of histamine. Before the caffeine solution was given the duodenal catheter was introduced and the secretion of the fasting stomach was withdrawn. After the administration of the caffeine solution the gastric contents were withdrawn at intervals of from ten to fifteen minutes. The results of these tests are summed up as follows: In severe cases of exophthalmic goiter the histamine had no influence on the gastric secretion, but in patients in whom the symptoms of the exophthalmic goiter showed improvement there was a temporary increase in the acidity. Only in sympathetic neuroses did the histamine always produce a normal increase in acidity, whereas before the test these patients had likewise had a marked subacidity. This functional disturbance of the stomach in patients with exophthalmic goiter is not caused by anatomic changes in the mucous membrane, but it is the effect of the thyroid hormone, which in the course of time exerts a toxic influence on the organism. The investigations prove that an achylia develops not only in complete atrophy, in severe poisoning of the gastric epithelium, in cancer, in pernicious anemia and in old cases of gastro-enterostomy but also in hyperthyroid conditions, particularly in exophthalmic goiter. Roentgen examination of the stomach in patients with exophthalmic goiter never revealed pathologic conditions. In spite of the decreased or absent acidity, an atrophy of the gastric mucous membrane is not demonstrable. The author is now conducting experiments on the influence of other endocrine glands on the gastric secretion.

Deutsche Zeitschrift für Chirurgie, Berlin

231: 305-448 (May 7) 1931

Clinical and Experimental Investigations on Goiter and on Exophthalmic Goiter: Investigations on Iodine Content of Blood. E. Schneider and E. Widmann.—p. 305.
*Clinical Aspects of Pulmonary Carcinoma. C. Häbler.—p. 323.
Resection of Gastric Ulcer and Its After-Treatment. F. W. Lapp and H. Neuffer.—p. 345.
Significance and Roentgenologic Demonstration of Schmorl's Cartilage Nodules. K. Brandes.—p. 361.
*Tests of Callus and Bone Extracts in Treatment of Bone Fractures and of Bone Cysts. W. Hoffmeister, T. Teichmann and C. A. Rothenheim.—p. 380.
*Mode of Action of Tissue Autolysates, Especially of Callus Autolysate: Spontaneous Development of Bone Cysts. J. Hempel.—p. 387.
*Treatment of Retrosternal Dislocation of Clavicle. H. Niessen.—p. 405.

Clinical Aspects of Pulmonary Carcinoma.—Häbler reports his observations on forty-seven patients with tumors of the lung. Only one of the patients was a woman. The author points out that the majority of workers who have reported on tumors of the lung observed a predominance of men among their patients. The assumption that occupational injuries are perhaps the cause of pulmonary tumors could not be corroborated. A predisposing influence of coal dust, of tobacco smoke, of tobacco dust, or of gassing during the war could not be demonstrated. However, the author attaches some importance to two other theories. The first is that carcinoma is a disease due to "abnutzung" (wear and tear). On the face of it, this would explain only the greater frequency of carcinoma in the higher age groups. However, when one considers the difference in structure of the thorax and of the capacity of the lungs in both sexes, it can be seen that the vital capacity of women is considerably less than in men. Consequently the possibilities for abnutzung are also greater in men. The other theory is that carcinoma develops on the basis of congenital epithelial metaplasias. Bronchiectasis, which is also due to metaplasia, is likewise more frequent in men than in women. Consequently, it is assumed that metaplasias, including carcinoma, of the pulmonary epithelium are more frequent in men than in women. In four of the patients a trauma of the chest had preceded. However, a correlation between the trauma and the tumor could not be detected. In discussing the causal significance of heredity, the author states that in only two cases had the parents had a malignant growth. He asserts that the majority of patients had had pains for only a comparatively short time and yet most of them were inoperable when treatment began. An early sign is a dry, barking cough. Other signs generally appear only when the carcinoma has progressed so far that therapeutic measures are no longer of avail. Of the various diagnostic methods, roentgenoscopy and exploratory thoracotomy are discussed in detail. In the last part of the article the various therapeutic measures are mentioned.

Skin Tests with Callus and Bone Extracts in Fractures and in Bone Cysts.—Hoffmeister and his collaborators found that from bone tissues, particularly from callus and also from the serum of patients with bone fractures, a substance can be extracted that produces a positive skin reaction in patients with fractures. Injection of small quantities of the bone extract at the site of fracture stimulates its healing. In patients with bone cysts or with inflammatory changes of the bones (tuberculosis) the specific substance seems likewise to be present in the blood, for in such patients also positive skin reactions were obtained with the extract.

Mode of Action of Tissue Autolysates, Especially of Callus Autolysate.—Hempel tested in guinea-pigs the action of bone and of callus autolysates on normal, that is, on not traumatically injured, articular membranes, periosteum and interstitial connective tissue of the muscles. Microscopic examinations revealed certain reactions of these tissues to the injected autolysate, but never new formation of bone or metaplasia of connective tissue into bone tissue. It seems that for the latter changes a traumatic injury is essential. Besides the local tissue changes there were general reactions in the form of spontaneous hemorrhages of the bone marrow, occasional subperiosteal hemorrhages and development of cysts in the bone marrow. This shows that the latter may develop without traumatic injury. The author emphasizes that in the autolysates of bone and of callus it is essential to differentiate between the action of substances that stimulate the formation of bone tissues and those which further their disintegration, accelerate regeneration or inhibit it. Local as well as general reactions were more marked following injection of autolysates from callus than after injection of autolysates from bones.

Treatment of Retrosternal Dislocation of Clavicle.—Niessen emphasizes that in retrosternal dislocation of the clavicle the early restoration of normal articular conditions should be the aim. He first discusses nonsurgical reposition. It can usually be effected by drawing the shoulder backward while the arm is abducted. The proper fixative is more difficult. The author thinks that the Desault bandage, which is recommended by some, does not give security for a sufficient backward fixa-

tion of the shoulder. He considers the so-called knapsack bandage, in which a cotton pad is laid between the scapulae and then fixed by a stella dorsi (dorsal cross bandage), the most effective fixation bandage. However, if the nonsurgical reposition and fixation do not have a permanent effect, surgical treatment should be resorted to. The aim of the operation should be to reestablish normal conditions and to prevent redislocation. The author obtained favorable results with a modification of Marxer's method, which Marxer devised for the treatment of presternal dislocation of the clavicle. This method avoids undesirable irritation by wires or by silk threads; free transplantation of a strip of fascia from the thigh is used. The author gives a detailed description of his modification of Marxer's technic. In a case of presternal dislocation of the clavicle, he obtained good results with Marxer's original method.

Jahrbuch für Kinderheilkunde, Berlin

131: 257-380 (May) 1931

Morbilloid of the New-Born: Histology of the Exanthem. S. Rosenbaum.—p. 257.
*Epidemiologic, Bacteriologic and Clinical Observations on Two Hundred and Thirty-Five Children with Dysentery: Active Immunization Against Dysentery. E. Hässler.—p. 284.
Secretion of Salivary Glands in Epidemic Parotitis During Childhood. N. R. Schastin.—p. 304.
*Nutritional Experiments on Young Goats: Influence of Autoclaved Cow's Milk and of Vitamins B, C and D on Growth. W. Catel and G. Pallaske.—p. 313.
Isolated Spontaneous Levulosuria During Childhood. A. Fischer.—p. 341.
*Bronchography in Bronchiectasis in Children. N. A. Panow and A. M. Gelfon.—p. 348.

Active Immunization Against Dysentery.—Hässler made his observations at the university children's clinic in Leipzig in the years from 1926 to 1929. The high percentage of dysenteric disorders among all diseases, as well as the fact that in the course of three years there was not one month in which there were no dysenteric disorders, convinced him that dysentery is endemic in Leipzig and that it is the chief causal factor of intestinal disturbances in infants and small children. In discussing the bacteriology of dysentery, he first directs attention to the disadvantages of the lack of a uniform terminology for the various types of dysentery bacilli. He then reports bacteriologic studies on various types, especially on E dysentery. The report on the clinical observations contains tables which indicate that the morbidity and mortality from dysentery is greatest among nurslings during the first year of life, particularly during the third, fourth and fifth months. A detailed description of the symptomatology is omitted because the symptoms were in most instances like those described in other reports on infant dysentery. In some instances, serious intoxications were noted, whereas in others the disease took an abortive course. In the latter cases, abnormal stools that contained dysentery bacilli were the only sign of the disorder. In one child, aged 5, serious meningeal symptoms were noted. The author further discusses the transmissibility of dysentery and the various ways in which it is spread. In discussing the prophylaxis, he describes his attempts with active immunization. The vaccine was prepared from twenty-four hour slant agar cultures. At first, these cultures contained only the E and H types of dysentery bacilli; later the A, D and I types were included. The twenty-four hour slant agar culture is suspended in 10 cc. of physiologic solution of sodium chloride at 37 C. Then the bacilli are killed by raising the temperature for one hour to 57 C., and a 0.5 per cent solution of phenol is added. Following this the preparation is diluted 1:5 with a 0.5 per cent solution of phenol and sodium chloride and placed in 1 cc. ampules. In order to avoid undesirable general reactions, intracutaneous vaccination was done. The immunizing result was the same as in intramuscular injection. With an interval of seven days the children were given twice 0.1 cc. of the vaccine. In some instances the same quantity was given once more after six weeks. Every year about 1,000 children were immunized in this manner. Of the 4,000 who were vaccinated in the course of four years, 25 contracted dysentery. Some of these failures were due to the fact that in the first year the type D was missing in the vaccine, and also because the E type has two different growth forms. In the last part of the article the author evaluates the various therapeutic methods, and he concludes that as yet there is no specific remedy against dysentery and that the most effective treatment is a proper diet.

Nutritional Experiments on Young Goats: Influence of Autoclaved Cow's Milk and of Vitamins B, C and D on Growth.—Catel and Pallaske give the following summary of their experiments: 1. If young goats, following a short period of normal growth effected by feeding with raw goat's milk, are fed exclusively with autoclaved cow's milk, the growth process is nearly satisfactory in only two out of ten animals. In the other animals, growth ceases entirely after a few days. The appetite and consequently also the food intake decreases. The calcium and the phosphorus values in the blood serum show fluctuations, but there are no changes that indicate spasmophilia. The clinical symptoms of spasmophilia are likwise absent. The small, stunted animals generally die after two or four months, as the result of cachexia. 2. By the daily addition of from 20 to 40 drops of a 0.2 per cent solution of viosterol to the autoclaved cow's milk, it was nearly always possible to increase the amount of food taken by the young goats and also to stimulate their growth. 3. If, in addition to the autoclaved cow's milk, the goats were given vitamin B, the growth became normal in two out of four animals; in the others, however, the growth process was retarded in the same manner as in the animals that were given only autoclaved cow's milk. 4. Two young goats were given lemon juice in addition to the autoclaved cow's milk. One grew normally and the other thrived better than on the milk alone. 5. In addition to their specific action, the vitamins have an indirect influence on growth. There is as yet no convincing proof for the existence of a specific growth vitamin. 6. In the animals that had received viosterol, neither the macroscopic nor microscopic examination revealed changes in the vascular system or in the organs that would indicate an injury by the irradiated ergosterol.

Bronchography in Bronchiectasis in Children.—Panow and Gelfon show that bronchography can be employed not only in adults but also in children. In children the filling with the contrast medium is done best by means of a soft rubber tube, which is introduced through the anesthetized larynx into the trachea. Bronchography should be done in addition to the clinical and roentgenologic examination in doubtful cases of bronchiectasis. It will reveal the extent of the process. In cases in which the clinical and roentgenologic examinations permit an exact diagnosis, bronchography is superfluous.

Münchener medizinische Wochenschrift, Munich

78: 781-820 (May 8) 1931

*Irradiation in Treatment of Malignant Chorionepithelioma. H. Wintz.—p. 781.
Treatment of Carbuncles. W. Gerlach.—p. 783.
Simplification of Chromocystoscopy by Use of Sterile Indigo Carmine Solutions in Ampules. P. Hunold.—p. 784.
Possibilities of Somatic and Psychic Treatment in Serious Organic Diseases. A. A. Friedländer.—p. 785.
Use of Cycle Hormone (Female Sex Hormone) in Case of Pernicious Anemia. R. Sajitz.—p. 790.

Irradiation in Treatment of Chorionepithelioma.—In spite of the fact that most authorities recommend surgical treatment for chorionepithelioma, Wintz employed irradiation in all cases that came under his observation during the last fifteen years. Experiments on patients with cancer of the uterus and investigations on the ray sensitivity of the different cell groups had convinced him that effective ray therapy was possible. It was found that the cells of the chorionepithelioma were from 40 to 50 per cent more sensitive to irradiation than the cells of the surrounding normal tissues. In comparison to the ray sensitivity of carcinoma, the difference in favor of chorionepithelioma is from 20 to 30 per cent. The author describes the clinical histories of eleven patients, who were subjected to irradiation. Eight are still alive. In the patient treated last the therapy was concluded two years ago, while the first one was given the treatment thirteen years ago. Of the three patients who died, one died as the result of the chorionepithelioma. In a second patient, who died one year after the irradiation, the results of the necropsy were not quite clear The third patient died nine years after the irradiation, following an intercurrent disease. The author thinks that the results

that he obtained justify irradiation in chorionepithelioma. In regard to the dosage, he states that he applied from 80 to 90 per cent of the unit skin dose. In the first two cases he employed radium, in addition to the roentgen rays. But he found it not only superfluous, but even dangerous because of the manipulations that were necessary. The roentgen rays were applied by a technic that is similar to the one used in carcinoma of the uterus. In most cases, concentrated and distant irradiations were combined, but he thinks that distant irradiation with large fields is the best method. Whether the exclusion of the ovaries, which is an unavoidable result of the irradiation, is of value for the permanent cure cannot be definitely decided. At any rate, it is proved that by means of roentgen rays the cells of the chorionepithelioma can be destroyed and, since in roentgen treatment there is no mechanical promotion of dissemination, irradiation is superior to operative treatment.

Wiener klinische Wochenschrift, Vienna

44: 597-628 (May 8) 1931

*Progressive Cerebration and Investigations on Anatomic Foundations of Talents. C. Economo.—p. 597.
*Wave of Nephrolithiasis and Its Probable Causes. V. Blum.—p. 602.
C'en.
Drainage in Valvular Pneumothorax. A. Kenner.—p. 605.
Therapeutic Application of Insulin-Free Pancreas Extract. N. Kisthinios.—p. 610.
Therapy of Cirrhosis of Liver. L. Popper.—p. 615.
Protein Therapy. J. Donath.—p. 616.
Evaluation of Bodily Structure, of Course of Development and of Developmental Disturbances During Childhood. W. Kornfeld.—p. 618.

Anatomic Foundations of Talents.—Economo reports the results of recent studies on the microscopic structure of the human cerebrum. The investigations convinced him that the human cerebrum exceeds the animal brain not only in regard to quantity but also in regard to quality, because it possesses a finer differentiation and new organs that represent the development of new abilities. Comparison of the brain of *Homo sapiens* with the brain of his prediluvial and diluvial forebears indicates that especially the frontal and temporal lobes, that is, the substrates of higher intelligence, have increased. In contradistinction to the mere mass increase of the brain in the higher orders of animals, this increase, finer differentiation and qualitative further development of the cerebrum within the genealogical succession of the human species is designated by the author as progressive cerebration. Considered from this point of view the development of human culture is the result not merely of the accumulation of the treasures of civilization but also of the further biologic development of the brain. The author discusses the future of progressive cerebration, whether the development is advancing or whether it has terminated and is stationary or perhaps even retrogressive. Anatomic studies and the law of orthogenesis seem to indicate that the present tendency of the human species is progressive cerebration. The great individual differences in the brains of human beings and the special talents of some persons, which go far beyond the normal, are further proofs against a stationary condition of the human cerebrum. The author stresses the desirability of studying the anatomic foundations of special talents, and he discusses the recent efforts and new methods in this field of research. In conclusion he calls attention to the great significance of especially gifted persons, on whom, he maintains, the progress of a people depends.

Wave of Nephrolithiasis and Its Probable Causes.—At the end of his report, Blum gives the following summary: 1. The observations of medical practitioners as well as the statistics of surgical and urologic clinics of the central European states prove that since the year 1924 there has been a steadily increasing frequency of nephrolithiasis, so that one may speak of a "wave" of nephrolithiasis. 2. A study of the geographic distribution of nephrolithiasis indicates a certain antagonism between lithiasis and goiter. In goiter regions, lithiasis is rare, and vice versa. 3. In experiments on animals it could be proved that a diet which is deficient in vitamins regularly produces urinary calculi. 4. In metabolic experiments it was found that hormonal influences are also significant in calculus formation and that salt retention and elimination are influenced by the thyroidal hormone. Retention of uric acid, alternating with excessive elimination of it, can be effected by medication with thyroid preparations. The calcium metabolism, a disturbance in which may lead to the formation of calcium calculi, is regulated by the parathyroids. 5. The influence of the vitamin deficiency or of the disturbance of the hormonal equilibrium becomes manifest as a disturbance in the colloid content of the urine, which in turn facilitates a precipitation of the calculus forming crystals. 6. The wave of nephrolithiasis is the outcome of epidemically developing hormonal and metabolic disturbances. They were caused by the vitamin deficiency of the diet during the war and during the postwar period. 7. That mistakes, which may lead to endocrine and to metabolic disorders, are still being made is proved by the misuse of iodine preparation for thyrotoxicoses. Similar mistakes are the cause of the increased frequency of nephrolithiasis. 8. Not only because of the danger of thyrotoxicosis but also because of the formation of renal calculi, the misuse of iodine medication and of reducing preparations containing iodine should be warned against. The rules in regard to the diet of persons predisposed to nephrolithiasis have to be revised. One-sidedness in nutrition is to be avoided. A pure meat diet as well as vegetarianism and a raw diet are wrong, and not only vitamin deficiency but also hypervitaminization has to be guarded against.

Zeitschrift für Tuberkulose, Leipzig

60: 177-256 (April) 1931

Effect of Gerson-Herrmannsdorfer-Sauerbruch's Salt-Free Diet on Tuberculous Diseases. A. Herrmannsdorfer.—p. 177.
*Therapeutic Effect of Ligature of Pulmonary Veins in Cavernous Pulmonary Tuberculous. H. Edel.—p. 187.
*Ligature of Pulmonary Veins in Pulmonary Tuberculosis. F. Kerschner.—p. 198.
Metal Salt Therapy: Treatment of Experimental Tuberculosis in Guinea-Pigs. L. E. Walbum.—p. 204.
Necessity for Separation of Patients with Open Tuberculosis from Those with Closed Tuberculosis. G. Schellenberg.—p. 209.
Cure of Open Pulmonary Tuberculosis. G. Poelchau.—p. 212.
Percussion of Pulmonary Apexes. I. D. Mischenin.—p. 218.
Tuberculosis of Bones and Joints in Relation to Pulmonary Tuberculosis. A. Hecker.—p. 222.

Ligature of Pulmonary Veins in Pulmonary Tuberculosis.—Edel points out that, in cavernous pulmonary tuberculosis, collapse therapy is the most effective treatment. After evaluating the various forms of collapse therapy, such as pneumothorax, extrapleural thoracoplasty and phrenic exeresis, he discusses the action mechanism of collapse therapy. Two factors are of especial significance: 1. The compression of the blood and lymph channels at the root of the lung effects detoxication and hyperemization. 2. The diseased portion of the lung relaxes. The vascular compression and the resulting congestion hyperemia is, according to most authorities, the most significant factor in collapse therapy. The author attempted to produce hyperemia of the diseased portion of the lung by ligature of the pulmonary veins. He admits that this method is not entirely new, for as far back as 1911 it had been proved in animal experiments that the stasis produced by ligation of the pulmonary veins was followed by development of connective tissue, contraction of the lung and thickening of the pleura, and when these animals were infected with tubercle bacilli the foci developing on the side where the ligature had been done were much smaller and less in number than on the other side. In four patients, in whom other forms of collapse therapy such as phrenicectomy and pneumothorax had failed, ligation of the pulmonary veins was resorted to. This intervention had a favorable influence on the foci of infiltration as well as on the caverns. In three cases the ligation was done on the right side and in one case on the left side. Because of the short time of observation and the small number of cases, the author can make no definite statement in regard to the indications for ligation of the pulmonary veins. However, the four cases demonstrate the possibility and the effectiveness of this method. Over thoracoplasty the ligation of the veins has the advantage that it is less radical and not disfiguring. But it is not intended as a substitute for thoracoplasty. In each case it will have to be decided whether ligation or thoracoplasty should be done. In cases presenting rigid caverns the ligation seems to be of great help, especially since thoracoplasty usually fails in such cases.

Ligature of Pulmonary Veins in Pulmonary Tuberculosis.—Kerschner describes the technic of ligation of the pulmonary veins which he employed in the four patients sent to him by Edel. The operations were performed under general anesthesia. An incision about 10 cm. long was made along the upper border of the third rib. At the sternal end of the rib

the incision was extended in a downward curve. The third rib and its cartilage were temporarily resected and turned to the side. In one instance the third and fourth ribs were resected. Then the internal mammary artery was doubly ligated and divided. Through the pleural opening the hilus of the lung was approached mostly with blunt instruments. In the patients thus far operated on there always were extensive adhesions. If the intervention is made on the right side, one sees at the edge of the pericardium the superior vena cava. The course of this vein facilitates the orientation. In all cases it was possible to separate the adhesions without marked hemorrhage and to approach the pulmonary vein at the hilus. The trunk and its branches leading to the upper lobe are easier to find than the branch for the lower lobe. The latter is more dorsad and obliquely downward and, in the patients operated on, it was always embedded in indurations. The author ligated all branches or the main trunk for the upper and middle lobes. On the lower lobe he generally ligated only one of the larger branches. The ligation was done with the aid of a Deschamps needle by passing a strong silk thread around the previously isolated branches of the vein. Great care was taken that the posterior wall of the veins, which adhered to the substratum, was not injured. In order to avoid injuring the intima or cutting into the vein, the ligature was never knotted tightly. At the end of the operation the flap with the piece of rib was turned back again and the wound was closed in several layers. In two cases a secondary necrosis of the cartilage developed, so that the wound healed partly by secondary union. In a third case the resected portion of the rib was removed because of necrosis. The author points out that the ramification of the pulmonary vein varies. He gives diagrams of some of the variations. In regard to the results of the operations, he states that the patients' general condition improved markedly. Subsequent roentgen examinations revealed retrogression of extensive fresh tuberculous foci and contraction of the caverns to complete collapse. Pulmonary edema, which had been observed in animal experiments, did not develop, because there never was a complete ligation of all the branches of the pulmonary vein. The object of the operation was not a complete obstruction of the venous drainage of the entire half of the lung, but only a prolonged stasis in its most severely affected portions.

60: 257-352 (May) 1931

*Experiences with Roentgen Examination of Apparently Healthy Persons. M. Neumann.—p. 257.
*Course and Prognosis of Pulmonary Tuberculosis Detected When Apparently Healthy Persons Are Subjected to Roentgen Examination. H. Braeuning.—p. 273.
*Treatment of Tuberculosis with Methylated Antigen. A. Boquet and L. Nègre.—p. 301.
*Pleural Calcifications. G. Apitz and G. Frischbier.—p. 310.
Gastric Secretion in Medication with Cod Liver Oil. H. Kausch. —p. 315.
Investigations on Blood of Tuberculous Persons Treated with the Sauerbruch-Herrmannsdorfer-Gerson Diet. M. Stamm.—p. 322.
Outline of a Uniform Statistical Study of Tuberculosis in Berlin. O. Glogauer.—p. 326.

Experiences with Roentgen Examination of Apparently Healthy Persons.—Neumann reports that roentgen examination of 3,757 persons who considered themselves healthy revealed that 3.5 per cent of them had tuberculous processes necessitating further observation and that 1.7 per cent of these had processes which required treatment. This number is larger than that detected in former investigations. This can be accounted for partly by the better technic of roentgenoscopy and partly because those groups were examined which are especially predisposed to tuberculosis. In a population that is not especially predisposed or exposed, one may expect pulmonary processes that require observation or treatment in persons between 6 and 15 years in 0.4 per cent, in those between 16 and 30 years in 2.1 per cent, and in those over 30 years in 3.7 per cent. A greater incidence of unrecognized tuberculosis may be found among those who are exposed to infection, in those in poor economic circumstances, and in the insane. Open pulmonary tuberculosis develops in 48 per cent of all cases between the ages of 15 and 30. The number of tuberculous infections not recognized by the patients is greater than those that are recognized. The author deplores the fact that still too many cases of tuberculosis are recognized only when the process is already open. In order to reduce this number, it is necessary to extend the system of group examinations and to keep those who have recovered from tuberculosis under observation.

Prognosis of Pulmonary Tuberculosis Detected in Apparently Healthy Persons.—Investigations on 1,688 patients with open tuberculosis convinced Braeuning that about 70 per cent of such patients die as the result of open tuberculosis. He also found that only about 15 per cent of the cases of open tuberculosis are recognized before they become open. Consequently the fate of the majority of patients with open tuberculosis is already sealed when the tuberculous process is discovered. This shows how necessary it is that tuberculosis be recognized earlier. But, since incipient tuberculosis cannot always be detected by percussion and auscultation, roentgen examination is necessary. The author realizes that it is not possible to keep the entire population under constant roentgen control, but he stresses the necessity of observation of those groups that are predisposed or exposed to tuberculous infection.

Treatment of Tuberculosis with Methylated Antigen.—Boquet and Nègre describe how methylated antigen is prepared. In order to extract the bacillary lipoids, the killed and dried tubercle bacilli are treated with acetone. After forty hours of contact the acetone is removed by filtration and the retained bacilli are suspended in methyl alcohol, and this suspension is stored ten days at 37 C. After that time the suspension is filtered and the filtrate represents the methylated antigen. The extract prepared in this manner is diluted 1:20 in physiologic solution of sodium chloride and, in this form, presents a sensitive and specific antigen. The favorable action of the methylated antigen in experimental tuberculosis of animals led to its adoption in 1923 for the treatment of human tuberculosis. The authors give a detailed report of the technic of the treatment, and they stress that the injections should be given subcutaneously and in slowly increasing doses. Serious focal and general reaction can thus be avoided. If the treatment is continued for a sufficient length of time, surgical tuberculosis can be cured and a favorable influence can be exerted on certain forms of pulmonary and renal tuberculosis.

Pleural Calcifications.—Apitz and Frischbier describe three cases in which calcium deposits developed in the pleura following pleurisy. They think that degenerative changes in the pleural tissues after the pleurisy and an increased calcium content of the serum are the causes of the calcifications.

Zentralblatt für Gynäkologie, Leipzig

55: 1569-1632 (May 9) 1931

Critical Observations on Aschheim-Zondek's Pregnancy Reaction and Its Significance in Diagnostically Difficult Cases. P. Hauptstein. —p. 1570.
*Intravenous Continuous Drop Infusion of Dextrose Solution in Treatment of Puerperal Sepsis. E. Fauvet.—p. 1574.
Clinical Aspects of Pyocolpos and Hematocolpos Lateralis. E. Klaften. —p. 1584.
Hysterectomy of Gravid Uterus During Labor with Subsequent Delivery of Child. S. von Tóth.—p. 1593.
How to Prevent Retardation of Period of Dilatation. A. von Fekete. —p. 1594.
Syncytium and Reaction of Young Placenta. R. Vorster.—p. 1600.
Curettage of Uterus by Abdominal Route. A. W. Hochloff.—p. 1601.

Treatment of Puerperal Sepsis.—After differentiating and defining puerperal sepsis, Fauvet evaluates the chief therapeutic methods; namely, (1) the use of metals or of dyestuffs; (2) shock therapy; (3) the administration of antitoxins, of immune serums and of convalescent serum; (4) surgical therapy, and (5) the administration of concentrated foodstuffs. The latter method he discusses in detail. The oral administration of foodstuffs has no effect, and rectal application is contraindicated. However, good results can be produced with intravenous infusion of a solution of dextrose. Whenever the symptomatology indicates a severe infection, the cubital vein is opened, a glass cannula is introduced and infusion of a 4 per cent solution of dextrose is continued for twenty-four hours. During this time, about 1,500 cc. is administered. In some instances a more concentrated solution may be administered, but the concentration should never exceed 8 per cent. The favorable influence of this procedure is due to two factors: 1. The excessive loss of water is counteracted by the administration of fluid. 2. The nutritional therapy in the form of dextrose, which is a readily assimilable food, improves the patient's general condition; it counteracts particularly the chills. Occasionally the infusion has detrimental

effects on the circulation. Manifestations on the part of the heart sometimes necessitate an interruption of the infusion. But the periphlebitis or paraphlebitis, which generally develops, does not cause serious complications. In some cases the infusion is continued for several days. One case is cited in which 10,200 cc. was administered in the course of eight days. Careful observation of the patient is essential for the success of the treatment. The author considers the intravenous continuous drop infusion as the foundation of treatment in puerperal sepsis. An essential advantage lies in the fact that it can be employed early, as soon as the infection becomes dangerous. However, the infusion treatment does not exclude the other therapeutic methods. Serotherapy should precede it, and a surgical intervention should not be made unless an infusion treatment has preceded. The author had also the impression that the first fulminant manifestations could be mitigated. Comparative statistical reports revealed that the infusion therapy reduced the mortality rate of puerperal sepsis to less than one half.

Zentralblatt für innere Medizin, Leipzig

52: 321-384 (April 18) 1931

Tuberculosis from Standpoints of Pathologic Anatomy and of Immunobiology. H. Loeschcke.—p. 321.
*Simple Methods by Means of Which the General Practitioner May Recognize Renal Insufficiency. E. Becher.—p. 336.
Metastasizing Sepsis Following Tonsillitis. R. Sternheimer.—p. 348.

Simple Methods for Detection of Renal Insufficiency.—Becher's discussions on the detection of renal insufficiency are summed up as follows: A severe renal insufficiency and one of medium severity can be recognized by the fixation of the specific gravity of the urine around 1.010, and by the light color of the urine, which persists even in case of extrarenal loss of water, when otherwise the urine would become darker. Another sign is the peculiar yellowish gray discoloration of the skin on the face and hands. Volhard's water and concentration test shows whether the renal insufficiency is of minor, medium or great severity. Abnormalities which are of extrarenal origin, can, if all factors are considered, readily be differentiated, so that no mistake is made in the estimation of the renal function. The alkali tolerance test likewise aids in the early recognition of a renal insufficiency. However, disturbances indicated by this test do not necessarily parallel those detected by Volhard's water and concentration test. Although a renal insufficiency can be determined on the basis of these simple methods, it is nevertheless advisable that the blood should be examined for the presence of urea, xanthoprotein and indican. If the disturbance in the renal function is only slight, which is indicated by Volhard's water and concentration test, the blood may still be normal. Increase in all three substances always indicates renal insufficiency, but an increase in only one of the three substances may have other causes.

Ukrainski Medichni Visti, Kiev

7: 1-172, 1931

Professional Diseases: Pathologicophysiologic Analysis in Prophylaxis and Therapy. O. O. Bogomolez.—p. 11.
Pathologic Morphology of Pancreas. P. Kutcherenko.—p. 17.
Methodology of Anatomic Thought. M. Spirov.—p. 41.
Hemiptera Chromosomes. S. Shakov and K. Polischuk.—p. 49.
Influence of Various Chemicals on Psychomotor Centers. T. Gureev. —p. 85.
*Complement Fixation Antibodies in Blood Serum of Animals Hyperimmunized and Inoculated with Jensen's Sarcoma. M. Sereda and V. Levadny.—p. 91.
*Treatment of Lupus Erythematosus. O. Tijnenko.—p. 118.
Arsphenamine: Mechanism of Its Toxic Action. L. Sirota.—p. 132.
Mucocele Appendicitis. J. Ribak.—p. 153.

Antibodies in Serum of Animals Inoculated with Jensen's Sarcoma.—Sereda and Levadny in researches in this connection made the following observations: The complement fixation antigens of the serum of hyperimmunized animals, which appear after injections, persist for from twenty to thirty days. In the serum of animals inoculated with Jensen's sarcoma they appear at the end of the degeneration of the implanted neoplasm and remain there until the death of the animal. Bordet-Gengou's reaction for the diagnosis of malignant tumors was not employed, because it becomes positive only at the beginning of the degenerative process in the neoplasm, when there is not much difficulty in recognizing the nature of the ailment clinically. The hyperimmunization of large animals (sheep) for the purpose of obtaining from them the specific serum must be continued on horses because they react more acutely to the action of the immunizing factors.

Treatment of Lupus Erythematosus.—From his own investigations and a review of the literature on the treatment of lupus erythematosus, Tijnenko concludes that for general treatment one should use gold preparations, arsphenamine, von Holländer's method of combined therapy, and arsenic, phosphorus, iron and bismuth preparations. To get the most favorable results one must maintain a general hygienic regimen and stimulate the functions of the vital organs and systems. Among the methods of local treatment the author enumerates cryotherapy, radiotherapy and various means that help desquamation. Roentgen therapy is not of much value and is sometimes not safe. That is why it is not recommended in the therapy of lupus. With the aid of the means of treatment enumerated, one may slowly transform any severe case to a mild one, and possibly cure the patient completely.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

75: 2561-2680 (May 16) 1931

*Treatment of Cardiospasm. J. Enneking.—p. 2572.
Hemorrhage Following Peritonsillar Abscess. P. G. Gerlings.—p. 2578.
Spontaneous, Nontuberculous Pneumothorax. P. H. Kramer.—p. 2584.
Treatment of Accidental Injuries. J. Mulder.—p. 2591.

Treatment of Cardiospasm.—Enneking reports four cases of cardiospasm in which he employed successfully the instrument devised by Starck. He describes in detail the operation of the instrument, which he has found highly effective for the dilation of the cardia. In most cases, one dilation is sufficient. The improvement is immediate, though the patient may have suffered for many years from the condition. Only one fatal result is reported in the literature from the use of the instrument.

Hospitalstidende, Copenhagen

74: 405-432 (April 9) 1931

Acute Poliomyelitis: Review of Recent Experimental Results. O. Thomsen.—p. 405.
*Pathogenesis of Epilepsy and Origin of Epileptic Attacks Due to Hyperventilation C. J. Munch-Petersen.—p. 418.

Pathogenesis of Epilepsy.—Munch-Petersen made tests with hyperventilation (Foerster) in fifty patients with organic diseases of the central nervous system. His failure to produce the slightest epileptic symptom supports the view that epilepsy originates on the basis of a constitutional factor. Some of the frequent phenomena seen during hyperventilation are ascribed to elective irritation of the affected nervous tissue. Experiments with hypernictitation produced the same phenomena as hyperventilation, though often in weaker form, probably because the motor act of winking is less intense than that of breathing.

74: 433-460 (April 16) 1931

*Jaundice: IV. Investigations on Osmotic Resistance of Erythrocytes in Pathologic Conditions of Liver and Biliary Tract, Especially Acute Hepatitis. T. Geill.—p. 433.
Carbon Arc Light Baths with Water Filter. S. Lomholt.—p. 446.
Diverticula of Colon (Graser). E. Samuelsen.—p. 454.

Jaundice: Osmotic Resistance of Erythrocytes.—Geill made 155 determinations of the osmotic resistance of the erythrocytes in eighty-seven patients with jaundice due to pathologic conditions of the liver and biliary tract, especially acute hepatitis. The resistance, particularly the maximum resistance (total hemolysis), was increased in most cases; values down to 0.16 per cent sodium chloride were established. In acute hepatitis the resistance increased up to the acme of the disorder and decreased with the disappearance of the jaundice. No absolute parallelism was noted between the increased resistance and the degree of bilirubinemia. There was no relation between the erythrocyte resistance and the amount of cholesterol in the serum. The author describes a case of acute hepatitis that became chronic and in which cholemia was present without bilirubinemia. In the diagnosis an increased resistance of the erythrocytes in jaundice points to a jaundice of mechanical or functional origin; lowered resistance, to a hemolytic jaundice. A continued increase in resistance in hepatitis constitutes an unfavorable sign.